

IMAGES, THEATER, EMBODIED EXPERIENCES:
HOW ECOARTISTS ARE SHIFTING CONSCIOUSNESS AROUND THE CLIMATE
CRISIS

By
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Abstract

This thesis is a critical study of how the artists Edward Burtynsky, Michael Pinsky, Justin Brice, and the collaborative artistic team of Rugilė Barzdžiukaitė, Vaiva Grainytė, and Lina Lapelytė, use diverse mediums and methods to provoke strong emotional, visceral, or cognitive responses to the climate crisis. I examine the possibilities and limitations of each approach in delivering a momentary rupture, or a broader cultural disruption, which can trigger a re-examination of aspects of the climate crisis including energy consumption, waste, relationship with nonhumans, and/or global dependence on extractive industries. Timothy Morton's concept of the hyperobject, Semir Zeki's theories of art and ambiguity in the brain, and Baz Kershaw's concept of "theater ecologies" are salient influences on my interpretation. Neuroscientific theories on "somatic markers" and embodied cognition help clarify the mechanisms by which simulating toxic or ecologically impaired environments can evoke a sensual response in the viewer, which in turn stimulates care and attention, perhaps even action.

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Introduction: Covid, Climate, and Creativity



Mary Mattingly's *Life of Objects*, 2013

Artist Mary Mattingly's huge twined ball of detritus and manufactured goods bearing down on a prone, naked human expresses to me a "globe" and humankind in peril. As I view this image during the pandemic of 2022, it takes on additional metaphoric meanings—the vulnerability of humans against a biological scourge, the inescapability of forces beyond our control, the unending non-biodegradable waste

smothering ecosystems, Gaia getting her revenge on human actors. In my mind, linking disease and climate change is not a stretch.

Before the pandemic, I considered human-induced environmental and ecological damage to our planet to be our most serious public health problem. Biospheric harmony has been steadily eroding since the Industrial Revolution. Through the lens of the pandemic, I see the obvious connections—1) the climate-changed ecosystem has caused mutations, migrations, and extinctions in animal and plant life and 2) the climate crisis spurs environmental and public health problems. It may even have led to the new coronavirus or at least hastened its spread. Both crises create widespread physical and economic misery, but at different speeds and scales. COVID-19 directly attacks the body and can bring on physical suffering rather quickly. Climate change has brought extremes of weather that have reduced food and water, leading to famine. The pandemic quickly forced the shutdown of numerous economies worldwide; the climate crisis causes a more gradual loss of livelihoods for farmers, fishermen, vintners, the rural poor with no access to water, and other communities around the world who have shaped their lives according to seasonal rituals and tasks.

The combination of COVID-19 and the climate crisis results in more susceptibility to death in both humans and nonhumans. Pollution, allergens, and extreme heat, all exacerbated by global warming, are linked to compromised immunity, unhealthy lungs, depression, various cancers, and blood poisoning, and could be a factor in coronavirus. The pandemic is a subcategory of the climate crisis. In both, there is a narrative of risk and uncertainty. I recently read that public health experts knew that a pandemic of this scale was going to arrive. Similarly, climate scientists predicted decades ago that the

carbon threshold would exceed 400 ppm and result in irreversible global warming. The Improbable has arrived, and we don't know if sustainable solutions are possible.

At a recent University of Pennsylvania Environmental Humanities event, the panel raised questions about how to democratize the agenda and policy-making processes surrounding the climate crisis, given that decision makers tend to be the socially and economically privileged. They asked how we might expand constituencies and voices.¹ No single great answer emerged, but I immediately realized that artists can and have been doing exactly that! They have been democratizing the issue for over two decades by illuminating, questioning, and disentangling the cultural ideologies and forces that led to this crisis. Artists have given visual form to marginalized voices who are directly impacted by extreme climate events.

But they didn't stop there. They conceived of, galvanized, and participated in community projects that educate, serve, lift up, and enhance sustainable practices. They have created imaginative models and thought experiments for sustainable habitats, transportation, agriculture, and infrastructure. A few have been involved in the global discourse. They have shown resilience during the pandemic. First, physically limited to their private spaces or studios, they gradually moved online and into the socially distanced public sphere. The limitations imposed by isolation actually led to new forms of creative expression, new strategies, and new online partnerships. One of the most elevating examples of pandemic-related art honors those workers who serve at the forefront of the COVID crisis. Art creates and extends knowledge about the human

¹ *Unlikely Stories: Apprehending Climate Change in the Anthropocene*, A conversation with Amitav Ghosh and Adam Sobel, moderated by Nikhil Anand, PPEH Topic Director, May 8, 2020

and nonhuman ecosystem. It breaks up the bubble of expert exclusivity by reaching out its tentacles into spaces of shared humanity.

Until about 2005, although many artists framed their work in terms of ecological or environmental concerns, hardly any engaged directly with climate change. The cultural conversation began to shift with the appearance of several influential works. That year, author and environmentalist Bill McKibben wrote an article titled “What the Warming World Needs Now Is Art, Sweet Art.” The following year, the dangers of global warming were communicated to the wider public through the documentary film *An Inconvenient Truth* and the publication of Elizabeth Kolbert’s *Field Notes from a Catastrophe*.² Climate change as a human-induced phenomenon has been recognized in some sectors of the scientific community for decades, and artists from different movements, especially ecofeminism and land art from the 1970s, have gradually taken on climate crisis content as the issue gains urgency.³ In the last fifteen years, climate-related work slowly began to filter into galleries, museums, city streets, and public parks. Today, artwork about climate breakdown proliferates in traditional and non-traditional spaces around the world, including on the surfaces of Arctic ice sheets and glaciers; in airports, shipping containers, deserts, stadia, theaters; and at borders

² *An Inconvenient Truth*, director Davis Guggenheim (2006). See Jessica M. Nolan, “‘An Inconvenient Truth’ Increases Knowledge, Concern, and Willingness to Reduce Greenhouse Gases,” *Environment and Behavior* 42, no. 5 (September 2010): 643–58, <https://doi.org/10.1177/0013916509357696>; Elizabeth Kolbert, *Field Notes from a Catastrophe* (Bloomsbury, 2006), updated edition 2015. See Philip Shabecoff, “Global Warming Has Begun, Expert Tells Senate,” *New York Times*, June 24, 1988, <https://www.nytimes.com/1988/06/24/us/global-warming-has-begun-expert-tells-senate.html>. For national survey data on Americans’ views on climate change since 2008 across several sociodemographic and political variables see “Explore Climate Change in the American Mind,” Yale Program on Climate Change Communication, March 31, 2021, <https://climatecommunication.yale.edu/visualizations-data/americans-climate-views/>

³ The terms *climate breakdown* or *climate crisis* imply a more severe, urgent threat than the term *climate change*, which is more widely used in the physical and biological sciences. See T. J. Demos, Emily Eliza Scott, and Subhankar Banerjee, eds., *The Routledge Companion to Contemporary Art, Visual Culture, and Climate Change* (New York: Routledge, 2021), 5.

between nations.⁴ Media traditionally associated with landscape and environment—painting, sculpture, and drawing—have taken a back seat to new media, video and film, and multimodal messaging. Earth’s matter, compounds, and elements—ice, fire, smoke (smog), water, and trees—have become not only the visual tropes of climate change, but in many cases the material of installations.⁵ This type of work does not always conform to canonical ideas about art, nor is it necessarily aimed at a sophisticated art audience.

As of this writing, there is a limited but growing number of ecocritical books and articles that address the variety of art forms and methodologies specifically dedicated to the climate crisis in the early twenty-first century.⁶ Very few take a *comparative* approach to the effectiveness of one practice to another in terms of viewer responses, whether emotional, visceral, or cognitive. Nor do they delve into the mechanisms that produce each of those responses. This angle has been pursued more robustly in environmental literature and film studies.⁷ Just as I was beginning to formulate my thesis in the summer of 2019, I discovered a groundbreaking, psychology-based study that looked at the varied reactions of visitors to different genres of climate-themed art, titled “Does Activist Art Have the Capacity to Raise Awareness in Audiences? A Study

⁴ The American blog “Artists and Climate Change” has a mission “to track these works and gather them in one place. It is both a study of what is being done, and a resource for anyone interested in the subject.” <https://artistsandclimatechange.com/>

⁵ Some of the most visible examples include Tavares Strachan, *The Distance Between What We Have and What We Want (Arctic Ice Project)* 2004–8; David Buckland/Cape Farewell, *IceTexts*, 2005–9; Olafur Eliasson, *Ice Watch*, 2014–18; HeHe, *Nuage Vert*, 2008; John Gerrard, *Western Flag (Spindletop, Texas)*, 2017; Jeff Frost, *California on Fire*, 2015–19; Klaus Littman, *For Forest*, 2019; Basia Irland, *Ice Books*, 2007–ongoing; Joan Jonas, *Moving Off the Land II*, 2019.

⁶ For examples see books by Demos; Geffen, Rosenthal, Fremantle, and Rahmani; Miles; Reiss; and Weintraub in Bibliography.

⁷ For a list of ecocritical publications that combine ecocritical textual or film analyses with empirical research see <https://empiricalecocriticism.com/resources/#journalsandseries>

on Climate Change Art at the ArtCOP21 Event in Paris.”⁸ I subsequently found a few case studies examining a variety of factors that influence the processing of climate-themed art. The psychology behind viewers’ reactions is indeed important, and informs many parts of this dissertation. But there are other crucial factors to be addressed if artists, critics, and curators wish to activate, advocate, contribute, disrupt, and persuade individuals and society at large that denial or ignorance about climate breakdown is not an option while the earth is literally decomposing and species are going extinct before our eyes.

When artists step out of the museum system, how does the audience change, and how does that have particular import when it comes to climate change communication? Is the artistic component diminished in favor of another sort of aesthetic experience? What sort of intellectual, affective, and sensorial experiences are derived from different media/exhibitions? Which modes resonate on a transnational and egalitarian level? This dissertation will examine the limitations and possibilities of ecological art inside and outside traditional venues as well as the unique strengths of different art forms in delivering a momentary rupture, or a broader cultural disruption, that can lead to a re-examination of our energy consumption and industrial practices. A secondary level of inquiry is whether the works specific to this dissertation have agency as advocacy or activism. These terms are often defined and used interchangeably. For the purposes of this paper, *environmental advocacy* will refer to public education and influencing societal attitudes, ideologies, and behavior through visual rhetoric.

⁸ L. K. Sommer and C. A. Klöckner, “Does Activist Art Have the Capacity to Raise Awareness in Audiences? A Study on Climate Change Art at the ArtCOP21 Event in Paris,” *Psychology of Aesthetics, Creativity, and the Arts* (July 1, 2019): 10-12.

Environmental activism will refer to performing or having others perform some sort of politicized activity in the public sphere.

The artworks in this study are presented in order along a range of engagement levels with the public, from least to most. That is, the work shown in private, paid venues is presented first, followed by semi-private (free or with fees), then semi-public (free, must be sought out) and finally, most public (free and easily accessible to all). This allows us to discover distinctions in the presentation and reception of *ecoart*⁹ in more elite, closed spaces and those in the wide-open locales.

An old military arsenal situated along a canal was a surprising venue for a performance piece commissioned for the 2019 Venice Biennale.¹⁰ *Sun and Sea (Marina)*, an innovative mix of theater, opera, and art direction by Rugilė Barzdžiukaitė (b. Lithuania, 1983), Vaiva Grainytė (b. Lithuania, 1984), and Lina Lapelytė (b. Lithuania, 1984) (going forward, “the Lithuanian collective”) conveyed a message about human apathy towards global warming. As viewers gazed down from a balcony, they saw a sprawl of swimsuit-clad human bodies relaxing and singing on an artificial beach. The characters seemed unaware of the toxins and carbon footprints embodied in their lifestyles. Human vulnerabilities were on parade in alternating solo and group reveries

⁹ For the purposes of this thesis, and for brevity and consistency, I will refer to climate crisis themed art as *ecoart*, and the artists as *ecoartists*. These terms may be interchangeable with ecological art, environmental artists, and ecocritical art in other contexts and discourses. *Ecoart* and *ecoartist* here are not meant to apply to the early environmental art practices of the 1970s-1990s. Likewise, I will abbreviate ecological philosophy to *ecophilosophy* and eco aesthetics as *ecoaesthetics*, etc.

¹⁰ The original dates for the 2019 Venice Biennale were May 11 to November 24, 2019, but it was cut short by the acqua alta (unusually high tide) of November 12, which flooded the city. The mayor of Venice, Luigi Brugnaro, attributed the disaster to climate change. <https://twitter.com/LuigiBrugnaro/status/1194371080170983424>

about life's disappointments and the characters' superficial interface with nature's ecological imbalance.

A second ecologically-minded work—an exhibition of photography by Edward Burtynsky (b. Canada, 1955), accompanied by a book, a feature-length documentary film in collaboration with Jennifer Baichwal and Nicholas de Pencier, and an interactive educational website—is titled *Anthropocene*.¹¹ In one mysterious image from that exhibition, the viewer might imagine a surreal vision of gigantic, unnaturally colored snails or a beautiful abstract design. The label, however—*Uralkali Potash Mine #4* confronts us with another meaning: the transformation of earth's geology for human usage. From one large-scale photograph to the next, the viewer moves through a variety of landscapes scarred by heavy industry, manufacturing, oil extraction, and mining. Yet the scale, the unexpected viewpoints, beauty of the abstract forms, the contrasts and richness of the color give these images an undeniable aesthetic drama.

My third paradigmatic example of an environmentally driven work of art is an assemblage of five transparent geodesic domes made of reclaimed wood and PVC bioplastic, situated next to the aluminum, glass and marble United Nations headquarters in New York City. This unlikely pairing of shapes, materials, and scales is titled *Pollution Pods*, by Michael Pinsky (b. 1967, Scotland). As the 2019 Climate Action Summit transpired inside the UN, visitors passed through the space of each dome on the plaza outside, inhaling, smelling, and tasting the increasingly polluted air of five cities—

¹¹ The *Anthropocene* series began circulating globally in the fall of 2018. The specific iteration referred to was *Edward Burtynsky: Megaresources*, Atelier FAS Gallery (via Philadelphia Contemporary), Philadelphia, PA, May 31–July 14, 2019.

beginning in the clean-smelling air of Tautra, Norway and then continuing through to the cities of London, New Delhi, Beijing, and São Paulo.

Finally, in tandem with Earth Day 2019, the immense courtyard of the Neoclassical Somerset House in London was filled with banal metal road signs bearing solar-powered digital messages. The messages had nothing to do with roadwork; rather, they were a choir of global voices decrying environmental injustices, extreme weather events, human-caused terrestrial damage, and philosophical musings on human existence. Each sign was independently significant, but the presence of many signs built up a crescendo conveying universal catastrophe. Artist Justin Brice (b. 1974, US)¹² titled this work *REDUCE SPEED NOW!*, which can be read as a metaphoric message aimed at humankind's industrial, technological, self-serving rush to ecological calamity.

These distinct art practices have one commonality—an overriding concern with climate breakdown, ecological crisis, and the human activities that produced it. They address mining, oil extraction and production, the burning of fossil fuels, global warming, and ocean pollution. Their critiques of these ongoing processes range from detachment to outright blame, but the aesthetic aspects of each of these works play a crucial role in shaking off any complacency or apathy about the ongoing environmental plunder and abuse exacerbated in the so-called Anthropocene epoch.¹³ By forcing us to

¹² In April 2021, the artist changed his professional name from Justin Brice Guariglia to Justin Brice.

¹³ According to National Geographic's Resource Library, dated June 7, 2019, "Officially, the current epoch is called the Holocene, which began 11,700 years ago after the last major ice age. However, the Anthropocene Epoch is an unofficial unit of geologic time, used to describe the most recent period in Earth's history when human activity started to have a significant impact on the planet's climate and ecosystems." As of October 2021, neither the International Commission on Stratigraphy (ICS) nor the International Union of Geological Sciences (IUGS) has officially approved the term as a recognized subdivision of geologic time.

acknowledge the loss, damage, destabilization, and violence inherent in polluting endeavors, these artworks each provide a rupture, which geography scholar Kathryn Yusoff asserts “is crucial to the redistribution of the sensible in how we continue or break with the destructive logic of industrial capitalist modernity.”¹⁴

This thesis is a critical study of how these four practices by the Lithuanian collective, Burtynsky, Pinsky, and Brice, using diverse mediums and methods, evoke sensory, cognitive, and emotional responses that slow down our rush to synthesize data. By interrupting the fields of normal experience, they prompt a sharper awareness of climate breakdown, and how we are implicated in it. Amidst the current ecological crisis, there are a plethora of ecoart practices that attempt to offer solutions or evoke imaginary pollution-free, sustainable worlds. Although real solutions are desired by every climate-concerned artist, the artists in this study are focused on mediating their personal relationships with the crisis, exploring the limits of their chosen medium(s), engendering prolonged looking and sensing, and exploring strategies that create an uneasiness with the status quo of climate inaction. I focus on these four to represent the diversity of effective practices, juxtaposing theory, formal analysis, and artist interviews.

My study relies on a range of art history, ecocriticism, contemporary philosophical debates about the Anthropocene, the history of environmentalism, and selected hypotheses from neuroscience and social science. The environmental philosopher Timothy Morton’s concept of the *hyperobject* has had a particularly salient influence on my interpretation of the ecoart described here. Morton coined the term to describe things such as ecosystems, global warming, and the Internet, which are

¹⁴ Kathryn Yusoff, “Biopolitical Economies and the Political Aesthetics of Climate Change,” *Theory, Culture & Society* 27, nos. 2–3 (May 2010): 79.

“massively distributed in time and space relative to humans.”¹⁵ Some features of hyperobjects may be visible, like the mines that Burtynsky focuses on. Glacial melt is perceived through the aerial photographs and mixed-media prints of Brice. *Pollution Pods* relies on the senses to make air pollution experientially vivid. The Lithuanian collective’s performance makes toxic oceans, another hyperobject, immediate for the viewer in another way. Morton’s *ecological thought*,¹⁶ Alexander von Humboldt’s view of the biosphere as a unified field of simultaneous actions and forces, and Arne Naess’s notions of *Deep Ecology* underlie all the works discussed, whether obliquely, directly, or ironically. The interconnectedness of all organisms is recognized through the poetry, song, and actions of the actors in *Sun and Sea* and implied through the digitized signage of Brice. The sincerity of Morton’s worldview is at times offset by his acute sense of irony. He partnered with Brice to provide pithy aphorisms which are then embedded into Brice’s artwork in equally ironic ways.

Semir Zeki’s neuroaesthetic theories of art and ambiguity in the brain¹⁷ inform my thinking about the way in which a work of art may initially appear beautiful or intriguing, and then, as the subject matter is revealed, turn into an experience of the terrible sublime, as Sir Edmund Burke defined it in the eighteenth century.¹⁸ This experience of horror, danger, and instability is provoked by Burtynsky’s photographs and films. These works and Pinsky’s *Pollution Pods* both exemplify ambiguity in an aesthetic experience. The viewer is initially attracted, then confronted with the disturbing reality. The twist of

¹⁵ Timothy Morton, *Hyperobjects: Philosophy and Ecology after the End of the World* (Minneapolis: University of Minnesota Press, 2013), 1.

¹⁶ Timothy Morton, *The Ecological Thought* (Cambridge: Harvard University Press, 2012).

¹⁷ Semir Zeki, *Inner Vision: An Exploration of Art and the Brain* (Oxford: Oxford University Press, 2003) and Semir Zeki, “The Neurology of Ambiguity,” *Consciousness and Cognition* 13 (2004): 173-196.

¹⁸ Edmund Burke and Adam Phillips, *A Philosophical Enquiry into the Origin of Our Ideas of the Sublime and Beautiful* (Oxford England: Oxford University Press, 1990).

expectation forces a deeper engagement with the issues of global air pollution or toxic waste. Another sort of ambiguity is present in *Sun and Sea*, as the actors' observations of climatic and biological transformations are not matched by any sense of anxiety or grief, let alone action.

Theater and performance scholar Baz Kershaw's writing on "theater ecologies" gave me new insights into *Sun and Sea* in terms of his concepts of the merger of nature and culture, and the relationship of spectacle and spectator.¹⁹ When the audience watches and hears about climate change through the actors' bodies and voices in the performance they sense their own vulnerabilities and culpabilities. I will show how the affect of the performance, along with this self-reflexive result, bring the issues into deeper relief and into a more existential framework.

The sensing of climate's unpredictable child, weather, in all its physical and cultural implications, was "staged" early on in a museum context, with Olafur Eliasson's *Weather Project* at the Tate Modern in 2003. Research and reflection on the merits of experiential art as an aid to gaining knowledge have led to a blossoming of such practices. As art historian and cultural critic T.J. Demos has theorized, "When we sense the climate, we *produce* the climate as an object of attention, research, and representation, all of which determine in part our *relation* to that knowledge...To sense—to feel, perceive, detect, apprehend, grasp with the senses—then, is not purely passive, or reflexive, but also active, involving agency, co-relations, and even co-production."²⁰ This concept is aligned with neuroscientist Antonio Damasio's hypothesis

¹⁹ Baz Kershaw, *Theatre Ecology: Environments and Performance Events* (Cambridge: Cambridge University Press, 2007).

²⁰ Demos, Scott, and Banerjee, *The Routledge Companion to Contemporary Art*, 149.

of the *somatic markers*—feelings in the body that trigger emotions, which in turn guide behavior, particularly decision-making.²¹ This idea informed my concept of how an artwork may transform the viewer's feelings and emotional and behavioral responses. Scientific studies have confirmed that emotional reactions to environmental risks such as climate change can be a driving force for behavior change and trigger a tendency to act.²²

Human sensorial factors are animated when visitors move through, feel, taste, and smell five different atmospheric environments in Pinsky's *Pollution Pods*. Building upon Damasio's idea of the confluence of body and brain in our emotional experiences, I use the work of Alexa Weik von Mossner and Luis Rocha Antunes²³ on the neuroscience of embodied cognition to understand the mechanism by which simulating an external environment can evoke a sensual response in the viewer, which in turn stimulates care and attention, perhaps even action. Burtynsky's trio of documentaries about massive human interventions in the environment demonstrates these neuroscientific theories. The latest of these documentaries, *Anthropocene: The Human Epoch*, provides the most encompassing view of global disruptions, and is the most immersive component of *The Anthropocene Project*. Neuroscience and psychology

²¹ Antonio Damasio, *Descartes' Error: Emotion, Reason and the Human Brain* (New York: Penguin, 2005).

²² Liselotte J. Roosen and Christian Klöckner, "Art and Documentaries in Climate Communication: Experiencing the Reality of Climate Change and Leading the Way to Change," *Art Research International* 5, no.2 (2020): 546.

²³ Alexa Weik von Mossner, *Moving Environments: Affect, Emotion, Ecology, and Film*. Environmental Humanities Series. Waterloo, Ontario, Canada: Wilfrid Laurier University Press, 2014 and *Affective ecologies: empathy, emotion, and environmental narrative*. Columbus, OH: Ohio State University Press, 2017. Luis Rocha Antunes, *The Multisensory Film Experience : A Cognitive Model of Experiential Film Aesthetics* (Bristol, UK: Intellect Books, 2016).

studies by Ellen Winner,²⁴ and Sommer, Klockner, Swim, and Keller,²⁵ also inform my approach to how art stimulates mood, empathy, biological responses, and cognition.

The selected artists aim to shift perception about the proximity and urgency of climate breakdown, and about those factions and systems who bear the most responsibility. When I began working on this thesis, many climate impacts were known, yet they seemed geographically remote. Since then, wildfires, catastrophic hurricanes, floods, and record-breaking heat waves have scourged many regions of the world including the United States, lending a new urgency to climate communication. Many who were climate deniers are now accepting human-caused climate breakdown as truth, and may be more receptive to both scientific data and climate-themed art. We get a glimpse of these reactions in the *Pollution Pods* chapter. To gain the most authentic account of visitor reactions, I took on the role of participant-observer (prior to the 2020-21 pandemic hiatus) as I moved through American and European ecoart exhibitions, took videos of spectators, and conducted informal exit surveys.²⁶

There are two dilemmas intrinsic to the ecoart discussed here. The first is the carbon footprint generated by the work itself, its exhibition, and its subsequent tours. Carbon awareness has been growing, but only recently has a robust initiative emerged to quantify the climate impacts of art exhibitions and promote climate-conscious

²⁴ Ellen Winner, *How Art Works: A Psychological Exploration* (New York, NY: Oxford University Press, 2019).

²⁵ L. K. Sommer et al., "Does Activist Art Have the Capacity to Raise Awareness in Audiences? A Study on Climate Change Art at the ArtCOP21 Event in Paris," 1–15. L. K. Sommer et al., "Pollution Pods: The merging of art and psychology to engage the public in climate change," *Global Environmental Change* 59, no. 101992 (November 2019).

²⁶ The author conducted surveys in 2019 at *In Real Life* at the Tate Modern, *Moving Off the Land II* in Venice, and *Sun and Sea (Marina)* in Venice.

decision-making throughout the art industry.²⁷ I, the author, am complicit in this, having flown to Europe to visit many artworks in person. The question arises: at what point is the scale of exposure and the type of audience engaged worth the carbon costs? Some of these costs can be offset. For example, since 1985, Burtynsky has planted forests, purchased fuel-efficient cars, and flown with companies that have carbon-offset programs²⁸ to counterbalance the mined raw materials that inhabit his cameras, his electricity usage in digital production, and his extensive travel by plane and helicopter. As we will see in a later chapter, artist Amy Balkin makes carbon offsets part of her art, legally purchasing and withholding carbon-gas offset credits in her artwork *Public Smog*.

The second dilemma is the cultural bias and experience of the author. The four featured practices are European and North American, as are their commissioners and sponsors, and this has its limitations. Can an artist of relative privilege authentically communicate the multi-tiered and geographically dispersed faces of climate change? Artists all over the globe are tackling these issues, particularly the dimensions of migration, economic injustices, food shortages, and insufficient protective infrastructures. Many do not have the visibility of their western counterparts, which has led global historian and climate scholar Dipesh Chakrabarty to opine, “only the West has the gumption, or chutzpa, or hubris to speak about the entirety of humanity.”²⁹ As I have limited knowledge of non-western art worlds and worldviews, I thought it imprudent to endeavor an interpretation of non-western art. My choices were influenced by the

²⁷ Annabel Keenan, “Exhibitions’ carbon footprints come under growing scrutiny,” *The Art Newspaper*, January 14, 2022.

²⁸ Seth Curcio, “*The Big Picture: An interview with Ed Burtynsky*,” *Art Practical*, June 26, 2012, https://www.artpractical.com/feature/interview_with_edward_burtynsky/

²⁹ “The Climate of History, Dipesh Chakrabarty in conversation with Navroz K. Dubash,” hosted by the Jaipur Literary Fest in partnership with the University of Chicago, YouTube video, September 18, 2020, <https://www.youtube.com/watch?v=ARlvXLpiI5E>

power and visibility of the work, the primacy of the aesthetic dimension as opposed to direct political, social, or environmental action, and the strength of the work's disruptive or ambiguous dimension, which necessitated a period of prolonged contemplation. I also chose based on my ability to see the work in person and gain access to artist and curator interviews that provided additional context. Face-to-face informal interviews allowed me to see and hear nuances about the artists' backgrounds, intentions, content, and the manipulation of their medium. It also enhanced my understanding of how each artist lives with the challenge of producing ecoart in a society whose energy-use trajectory is at odds with environmentalism.

Each chapter will provide an intimate view of how each of these artists process, mediate, and represent ecological threats, and how each works on our senses, emotions, and intellects. A summation of the art's reception from art critics, scholars, and casual viewers will be included when possible. Ultimately, this dissertation will paint a broad picture of innovative ways in which ecoart can deliver rupture in the perception and awareness of climate breakdown. While demonstrating how these artworks impact neuronal activity, I am simultaneously asking a universal rhetorical question: Can art actually have an impact on tackling the environmental disruptions that led to the climate emergency?³⁰

³⁰ In rare cases an artwork may spur environmental policy change, deter the laying of gas pipelines or oil drilling, or stop military bombing tests. Examples include Aviva Rahmani's *The Blued Trees* and *The Blued Trees Symphony* (2015–present); Subhankar Banerjee's *Oil and the Caribou Series*, 2002, and his exhibit *Seasons of Life and Land*, 2003; and Allora and Calzadilla's *Land Marks (Foot Prints)*, 2001–2. Visitor activism is rarely tracked.

Chapter 1

Sun and Sea (Marina): A Regular Day at the Beach?

As the audience gazes down from a darkened balcony, some with a libretto in hand,¹ they see a brightly lit sprawl of human bodies in quiet motion, relaxing at the beach on a summer's day.² (figs.1.1, 1.2)



Figure 1.1. Rugilė Barzdžiukaitė, Vaiva Grainytė, and Lina Lapelytė, *Sun and Sea (Marina)*, performance at the Marina Militare, Venice Biennale, 2019

¹ The libretto, or text of the opera, is composed of stanzas of poetry. At the time of the 2019 Venice Biennale, the libretto was only available online at https://sunandsea.lt/Sun-and-Sea_libretto.pdf.

² This analysis and all illustrations pertain to the performance of *Sun and Sea* at the Marina Militare, Venice Biennale, 2019, which the author attended, unless otherwise noted. The opera began a world tour in 2020 with a hiatus of a few months during the global pandemic. For the full touring schedule see <https://www.sunandsea.lt/en>



Figure 1.2. *Sun and Sea*, Venice Biennale, 2019, performance detail

The actors apply suntan lotion, eat, read, listen to their iPods, chat on their phones, chase their children and dogs. They are surrounded by plastic bottles, textiles, cell phones, aluminum chairs and petroleum products. They sing. First about banalities—suntan lotion and garbage, flies and dogs, clouds and breezes, then about personal encounters with ecological imbalance and loss—airplane disasters due to volcanic eruptions, loss of a proper winter, polluted swimming water, faded corals, bees falling from the skies, a drowning spouse. This “opera-performance” by the Lithuanian collective, titled *Sun and Sea (Marina)*, runs for fifty minutes, then cycles continuously for eight hours a day.³

³ On the *Sun and Sea* website the work is referred to as an opera-performance. There were two live performances per week at the 58th Venice Biennale (2019). The rest of the week offered just the installation with recorded music.

How does this nontraditional form of opera, in a nontraditional venue, contribute to the discourse of climate change? How does this aesthetic experience differ from other more durable forms of art? *Sun and Sea* does not present fixed iconic images or sounds or slogans about climate change, yet the crisis resonates from beginning to end. The removal of such tropes separates the work from much environmental art, and this absence requires a deeper commitment on the part of the spectator to pay close attention to the interplay between lyrics, music, and action. Close attention, though, may not yield a light-bulb moment because *Sun and Sea* can appear ambiguous and works on a paradigm of apparent bathos. It transitions from the sublime to the trivial.

The art direction, music and words conjoin to dismantle the normative perception of a day at the beach—relaxation and freedom from harsher economic, social, and political realities. The stanzas in the libretto seem randomly arranged; there is no obvious plotline; and the music, both harmonious and discordant, does not circle back to a common theme. This arbitrariness results in a delay of clarity and for some viewers a general distaste for the music. The visitor must give their full attention to all the moving parts in order to make sense of it.

The first departure from the normative performance is the venue itself. Visitors enter an abandoned military armory and climb a set of stairs to a gloomy space that overlooks an artificial beach filled with swimsuit-clad people of all ages, sizes, and shapes (mostly white Europeans). The crowds in the balcony become part of the visuals. There is a sense that this will be a shared habitat, a communal experience, that there will be no separation between art and life. There will be a fluid boundary in the aesthetic experience.

The staging of the performance confounds certain cultural expectations of what a beach scene looks and sounds like.⁴ Most people expect paintings, photographs and filmic images of the beach to frame a wide stretch of coastline at sunset or sunrise, a low horizon, and a crashing surf. Humans, if any, are usually sparse.⁵ In *Sun and Sea*, the stage is not framed at all. It is open-ended, without foreground, middle ground or background. The focus is on the lounging vacationers, their paraphernalia, and their intimate habits. Artistic director Rugilė Barzdžiukaitė explains, “It all started with the image from above...the form... the bodies are very well exposed on the beach, they are fragile like the earth, which also suffers...”⁶ The idea of human physical vulnerability is manifest in references to sunscreen, drowning, riptides, and dehydration. Mental and emotional weakness finds expression in the laments of “the Workaholic” and “the Complainer.” All the bodies are exposed, but not posed or idealized. Curator Lucia Pietroiusti describes the scene as “looking from above at a species and how that renders a defamiliarizing aspect.”⁷ She might agree with global historian Dipesh Chakrabarty’s theory that “We humans never experience ourselves as a species. We can only intellectually comprehend or infer the existence of the human species but never experience it as such.”⁸

⁴ Expectations and realities about beaches vary considerably around the world. They range from pristine paradises to oil-slicked danger zones.

⁵ One notable exception is painter Reginald Marsh’s Coney Island Beach scenes of the 1930s–1950s. In these paintings and prints, a mob of entangled humans fills the scene, obliterating the sand and sea. Examples can be found in the collections of the Metropolitan Museum of Art, Philadelphia Museum of Art, Whitney Museum, Yale University Art Gallery, and Smithsonian American Art Museum.

Other exceptions are the crowded and colorful aerial beach photographs of Massimo Vitali (the Guggenheim, Museum of Contemporary Art, Denver, Cisneros Collection); Andreas Gursky (Art Institute of Chicago, LACMA, Metropolitan Museum); and Martin Parr (SFMOMA, Getty Museum, Malibu, The Tate).

⁶ Rugilė Barzdžiukaitė, interview by author, Venice, September 30, 2019.

⁷ Lucia Pietroiusti, interview by author, London, September 23, 2019

⁸ Dipesh Chakrabarty, “The Climate of History: Four Theses,” *Critical Inquiry*, Vol. 35, No. 2 (Winter 2009), p.220.

This is a dilemma directly related to climate change. If we do not experience ourselves as a species akin to all other living organisms, then we cannot comprehend our shared fate in the climate crisis. *Sun and Sea* enables spectators to consider the actors, and by extension themselves, as a species through the strategy of the aerial view, and the shared identity that comes with close observation of other humans. Distance can also stand in for the characters' distance from ecological awareness and engagement. On the other hand, Pietroiusti's notion of a "defamiliarizing aspect" is actually countered by the emotive presence of the singing voices.

In this performance people spontaneously enter and exit the stage, move freely around the beach, touch each other, eat and make various sorts of noises. This casual, documentary style makes it feel more like daily life than like traditional opera or drama. Yet a polished musical score runs simultaneously. About this dichotomy, Barzdžiukaitė explained, "We have a structure which is made by the musical axis and the musical numbers which is more or less stable and everything else is documentary. People [the actors] come with instructions what not to do...otherwise they are free to be there and be spontaneous...that may be what brings some balance....It does not feel theatrical in a way although the genre of opera is very theatrical. Maybe it's less theatrical with all the fresh and free actions."⁹

The beach and its crowd are a microcosm of the billions of humans who continue to stress Earth's habitats and resources. The actors, who are mostly white and middle-class, live in an anthropocentric world where material desire trumps respect and equity for nature, the nonhuman, and the disenfranchised subaltern. The performance stresses

⁹ Barzdžiukaitė, interview. The reader should note that English is not her first language.

the nonchalance of privileged individuals (like many of the visitors to the Biennale) toward climate change.

The written libretto provides the conceptual backbone of the performance. It is a document of contemporary reactions to climate change's visible effects and how those effects imbricate with all forms of life. It is also a collective diary of human reactions to nature's opposite poles—its visual delights and sensual pleasures, and as a force which hurts, devours, disappoints and changes unexpectedly. It elucidates how individuals, and to a lesser extent corporations and governments, share in the blame for environmental crisis. The stanzas move between individual observations and feelings, and choruses about the dangers of the ocean. These are punctuated with two “Philosopher’s commentaries,” about the western world’s dependence on products and produce from India, Iran, China, and South America.

Because the libretto is non-linear, and seemingly random in its arrangement, in the following analysis selected passages will be introduced by theme, rather than in a chronological fashion. But before focusing in on the thematic content of the stanzas, some general context may be useful. *Sun and Sea*’s presence in Venice at the time of the *acqua alta* (exceptionally high tide) enhanced its environmental meaning and demonstrated the urgency of its message.

Venice and Climate Change

Sun and Sea was the Lithuanian entry to the 58th Venice Biennale (2019) and winner of the *Lion d’Or* (first place for a national pavilion). Vacillating between nuance, understatement, and overt emotion, the performance circuitously addresses the

anthropogenic actions that have scarred and reshaped the biosphere and human relationships. Like many other ecoartists, the Lithuanian collective finds the oceans to be a nexus of climate-related concerns. Marine-themed art has pivoted from extolling the ocean's inherent beauty to engaging with environmental injustice, migration, global warming, plastics disposal, and ecology.¹⁰

The performance's simulation of real life and its references to climate change turned out to be particularly prescient. On November 12, 2019, approximately twelve days before the scheduled closing of the Biennale, Venice experienced its worst flood in fifty years, forcing the closure of much of the city and sections of the heavily attended Biennale. The mayor blamed the flood on climate change.¹¹ Venice is just one of hundreds of coastal cities around the world that have already been affected by rising sea levels brought on by climate change. The flooding and severe storms affecting these areas have caused beach erosion, migration of animals and populations, loss of infrastructure and businesses including tourism, agricultural devastation, and declining human health and productivity. Rising seas could cost the world more than 4 percent of global GDP each year by 2100, unless countries prepare now for more coastal flooding or drastically reduce CO2 emissions.¹² In fact, in May 2021 carbon dioxide peaked near

¹⁰ Some of the organizations devoted to education and art exhibitions about the ocean are TBA21 Academy's Ocean Space and Ocean Archive, Venice; the PangeaSeed Foundation, Hawaii; One Planet One Future, Milan; Washed Ashore, Oregon; and Ocean Artists Society, California.

¹¹ "Two people die as Venice floods at highest level in 50 years," *The Guardian*, Nov.13, 2019. <https://www.theguardian.com/environment/2019/nov/13/waves-in-st-marks-square-as-venice-flooded-highest-tide-in-50-years>

¹² Renee Cho, "How Climate Change Impacts the Economy," State of the Planet, Earth Institute, Columbia University, June 20, 2019, <https://blogs.ei.columbia.edu/2019/06/20/climate-change-economy-impacts/>. Megan Sever, "Economic costs of rising seas will be steeper than we thought, unless we prepare," *Science News*, February 21, 2020, <https://www.sciencenews.org/article/climate-economic-costs-rising-seas-will-be-steeper-than-thought#:~:text=A%20study%20estimates%204%20percent,now%20for%20more%20coastal%20flooding>

420 parts per million at the Mauna Loa observatory (well above the scientific consensus of 350 ppm as a healthy baseline).¹³

At the Biennale around twenty out of eighty-eight national pavilions exhibited work that engaged with climate change either directly or indirectly.¹⁴ This is significant because the Biennale attracts huge crowds (600,000 international visitors in 2019¹⁵), and so can become an agent of climate change communication and a catalyst for cultural change (the irony of the event's inherent carbon and waste generation will be discussed below). That *Sun and Sea* won the top award is indicative of both its artistic novelty, and its relevance to contemporary planetary chaos. The 2010s witnessed more climate crises than ever before in recorded history.¹⁶ *Sun and Sea* became instantly popular, no doubt due to the award and the proliferation of articles, positive reviews, Instagram and Twitter posts around the world.¹⁷ Months after its May debut, it was still drawing outsized crowds.¹⁸ (fig. 1.3)

¹³ "Carbon dioxide peaks near 420 parts per million at Mauna Loa observatory," NOAA Research News, June 7, 2021, <https://research.noaa.gov/article/ArtMID/587/ArticleID/2764/Coronavirus-response-barely-slows-rising-carbon-dioxide>

¹⁴ According to the author's count during her visit and Guide to the Biennale 2019. Supplemento. *Il Giornale Dell'Arte* 397 (May 2019)

¹⁵ "THE BIENNALE ARTE 2019 CAME TO A CLOSE, CONFIRMING THE EXPECTED 600,000 VISITORS," <https://www.labiennale.org/en/news/biennale-arte-2019-came-close-confirming-expected-600000-visitors>

¹⁶ Sarah Kaplan, "The 2010s were a lost decade for climate. We can't afford a repeat, scientists warn," *Washington Post*, January 1, 2020, <https://www.washingtonpost.com/science/2019/12/31/s-were-lost-decade-climate-we-cant-afford-repeat-scientists-warn/>. James Temple, "The 2010s were another lost decade on climate change," December 24, 2019, *MIT Technology Review*, <https://www.technologyreview.com/2019/12/24/131392/the-2010s-were-another-lost-decade-on-climate-change/>

¹⁷ Among the early newspaper articles were Farah Nayer, "Venice Biennale's Top Prize Goes to Lithuania," *New York Times*, May 13, 2019, C 3. Jason Farago, "The Don't-Miss Shows and Pavilions at the Venice Biennale," *New York Times*, May 13, 2019. <https://www.nytimes.com/2019/05/13/arts/best-things-to-see-venice-biennale.html>

¹⁸ The author visited the venue twice in September 2019 (four months after the opening) and witnessed entrance lines that lasted up to two hours.



Figure 1.3. *Sun and Sea*, outside the Marina Militare, Venice Biennale, 2019

Subversion and Ephemerality in Lithuanian Art

Sun and Sea's critical and popular success came as a surprise to curator Pietroiusti and collaborators Barzdžiukaitė, a filmmaker and theater director, Grainytė, a writer, playwright and poet, and Lapelytė, a musician and sculptor.¹⁹ The Lithuanian millennials, who all attended the Lithuanian Academy of Theater and Music, had worked together before in Vilnius, where "the links between visual art, theatre, literature and music are strong" and there is a "small and concentrated cultural scene."²⁰ Their first production of *Sun and Sea* premiered at the Lithuanian National Gallery of Art in 2017. According to Pietroiusti, Curator at the Serpentine Galleries in London, it was her idea

¹⁹ Pietroiusti, interview

²⁰ Adrian Searle, "Beyond the beach of doom: what made Lithuania the world champions of art?" *The Guardian* (March 20, 2020), <https://www.theguardian.com/artanddesign/2020/mar/04/beach-of-doom-lithuania-art-scene-world-champions-venice-biennale>.

to build upon the original and take it to the Biennale. Updates were made in the piece's format and length, and it was translated into English. Pietroiusti thought the work was so "weird" that it might just work as a submission to the Biennale.²¹

Sun and Sea's specific fusion of climate-change content with nontraditional opera has no precedent in Eastern or Western Europe, or in the United States, though some features of the performance have art historical roots.²² Its approach and aesthetic echo Lithuanian performance art from the late 1980s onward. Recent Lithuanian politics, social history, and culture provide some context for *Sun and Sea's* avant-gardism. The Soviet occupation of Lithuania in 1940 signaled the end of a predominantly agrarian economy and the beginning of an industrial one. The military established a strong presence, private farms were collectivized, thousands of political dissidents were deported, and mass urban migration ensued. Artistic culture tended to avoid independent political views or forays into abstraction as contrary to the prevailing aesthetic of Socialist Realism, which infused all art with clear, official, ideological messages in support of the state.²³ Political art retreated to private spaces.

By the late 1980s, the decadence and corruption of the Soviet regime, the uneven distribution of goods, the Chernobyl nuclear meltdown (1986), the casualties of the Afghan war, and nostalgia for the agrarian way of life all contributed to political

²¹ Pietroiusti, interview. For past and upcoming tours see <https://sunandsea.lt/en>

²² In the ecoart literature I reviewed, I was unable to find any work similar to *Sun and Sea*. As to precedents in Lithuanian performance art, my assertion was confirmed by Amy Bryzgel, author of *Performance Art in Eastern Europe Since 1960 (Rethinking Art's Histories)* (Manchester: Manchester University Press, 2017) and *Performing the East: Performance Art in Russia, Latvia and Poland Since 1980* (London: I.B. Tauris, 2013), via email with the author, January 12, 2021. Also confirmed by Gediminas Urbonas, Lithuanian artist and MIT professor, in an interview with the author via Zoom, March 26, 2021. Urbonas provided political, historical, and cultural context for the emergence of political theater and the ecology movement in Lithuania in the 1980s and beyond.

²³ Bryzgel, *Performance Art*, 223.

discord and the rise of an ecological movement. As direct forms of dissent and disobedience were not possible due to Soviet repression, artists, especially in theater (the Jaunimo Theatre under director Nekrosius, and the Kaunas Drama Theatre under director Vaitkus from 1980-88) and visual art (Zalias Lapas in Vilnius, and Post Ars in Kaunas from 1988-91) played an essential role in mobilizing civic imagination.²⁴ Coded political theater and ephemeral art involving the body could not be traced, confiscated, or criticized by the government. For example, Post Ars created a massive outdoor performance in the Zatyšiai Quarry which involved rolling out huge sheets of paper, wrapping bodies, burning effigies and laying out colored pieces of fabric, with the whole filmed from above. This performance prefigures *Sun and Sea* in its lack of rigid structure, and its openness to chance and to multiple interpretations.

Lithuania declared its independence from the Soviet Union in 1990. Artist Gediminas Urbonas explains, “Since independence in 1990, Lithuania has been caught up in a mad period of privatization, property development and demolition. Like a Wild West land-grab or a gold rush, speculators and real-estate tycoons have joined forces with corrupt municipal bureaucrats to redevelop the country at an insane pace.”²⁵ These practices intensify the longing to reclaim and care for green spaces. Protests, experimental performance art, and film have been at the center of this cultural critique.²⁶

²⁴ Urbonas, interview.

²⁵ Nomeda and Gediminas Urbonas, “The Pro-test Lab,” *The Drouth*, November 27, 2019, <http://www.thedrouth.org/the-pro-test-lab-by-nomeda-gediminas-urbonas/>

²⁶ Likewise, eco activism in the US beginning in the 1970s has performative components. One example is Earth First’s “Crack the Dam” (1981), an intervention with a dramatic and aesthetic component at the Glen Canyon Dam in Colorado. Performance scholar Sarah Ann Standing argues that such protests should be recontextualized as performance because they “enlarge our understanding of the means by which people’s hearts and minds are moved and changed: the first step toward policy or legislative change.” See S. Standing, “Re-Visit/Re-Examine/Re-Contextualize/Re-Ignite,” in *The Routledge Companion to Theatre and Politics*, ed. Peter Eckersall and Helena Grehan (London: Routledge, 2019), 341.

One such public “performance” was mounted by the Pro-Test lab in Vilnius (2005), and opposed the destruction of the iconic Lietuva cinema. Barzdžiukaitė followed the project while she was a student at the Lithuanian Academy.²⁷

Sun and Sea draws on the open-endedness, subversion, and ephemerality of earlier Lithuanian art. In terms of its visual aesthetics, there is a nod to precedent in which bodies challenge normative social behavior and occupy the landscape in ways that counter traditional pictorial ideals. The sad and slow tempo of the music harkens back to historical Lithuanian songs.²⁸ These aspects give *Sun and Sea* a Lithuanian sensibility, though other European and American influences can be observed.²⁹

Anthropocentrism, Hyperobjects, and non-ecological thoughts

Sun and Sea’s true subject is the entanglements of human and marine life with climate change, as experienced through the ocean. The destructive role of capitalism and industry, and the persistent view of a Nature-Culture binary are skillfully and subtly

²⁷ See note 18.

²⁸ Urbonas, interview.

²⁹ *Sun and Sea*’s merging of informality, poetic fragmentation, banal acts, and volunteer participants, and its synthesis of different media have affinities with earlier work such as Alan Kaprow’s *Happenings* in New York in the 1950s–1960s and Fluxus in the 1960s–1970s. Fluxus, founded by Lithuanian-born George Maciunas, was an international network of artists dedicated to experimental art and a synthesis of different media, including poetry, visual art and performance. Vilnius hosted a Fluxus concert in 1966 which did not draw much attention. The group became much more visible in Europe and New York in the ensuing years. See Bryzgel, 2017. In terms of the opera’s form, *Sun and Sea* has some commonalities with Robert Wilson and Philip Glass’s ground-breaking *Einstein on the Beach* (1976), including a minimalist score, lack of a storyline, and nonlinearity (though Glass refutes the classification of *Einstein* as an opera. See “Philip Glass and Lucinda Childs discuss Einstein on the Beach,” YouTube, October 9, 2012, https://www.youtube.com/watch?v=e8Cx7XOYj_w). Both *Sun and Sea* and *Einstein* are non-didactic and oblique. Neither has intermissions, and audiences can enter and exit at will. The *Qatsi* trilogy of films, also scored by Glass, uses fragmented images and sound to convey the imbalance and friction between urban, technological life and the natural environment. Glass and Barzdžiukaitė have denied investing meaning or moral judgments into their work and suggest that that must be transacted by the audience. Glass, 2012, and Barzdžiukaitė, 2019.

woven throughout the libretto.³⁰ The visual focus on the actors and their mass-produced paraphernalia reflects the anthropological theory that humans have incorporated extracted resources into their lifestyles to the point that they have become part of our ecological niche.³¹ Selected passages from the libretto, and a close reading of the stage direction, will elucidate subsets of these themes.

The anthropocentric view, with its assumptions of human entitlement and invincibility, that undergirds the systems that contribute to climate change is manifested in “Siren’s Aria.” A widow who has lost her husband to drowning ponders animal and human evolution. She respects the wisdom of natural selection:

The great-great-great-grandmother of fish
 Passed on to her descendants the secrets
 of gill control:
 Every animal kingdom has its special
 privileges,
 Everything is wisely planned out...

³⁰ For an in-depth analysis of many definitions and aspects of the so-called nature-culture binary and the parsing of the term “cultural landscape,” see Val Plumwood, “The Concept of a Cultural Landscape: Nature, Culture and Agency in the Land.” *Ethics and the Environment* 11, no. 2 (2006): 115–150.

³¹ Peter Watson, *The Great Divide: Nature and Human Nature in the Old World and the New* (Harper, 2012). Rodney James Giblett, *The Body of Nature and Culture* (Basingstoke, EN: Palgrave Macmillan, 2008).

She then reflects that her ex-husband tried to conquer his own evolutionary limits and perished while deep sea diving:

but humankind...

my ex—

Was so inclined to rash behavior.

This mammal with limited lung power,

Still tries so hard to go into the sea,

To dive down deep:

He wants to conquer and control what is

not his to own...

The diver's belief in the invincibility of humans is disproven. In this case the suffering is limited to the widow, but on a broader scale, when humans try to “conquer and control what is not [theirs] to own,” the consequences are more dire. For example, when policy makers and engineers try to master the ocean and great rivers, the results can be disastrous for entire communities.

Alongside the notion of invincibility comes its correlate, the long-held western belief in the Nature-Culture divide. The following two passages show how the privileged humans at this beach prioritize their appetites, desires, and material wants ahead of their regard for nature.

In “Young Man from the Volcano,” the actor's flight schedule to see a bullfight is derailed by the airborne ash from a volcanic eruption. This event is a double-sided

metaphor—Man tries to dominate Nature, but Nature fights back. The plane lands in a different city, and the vacationer unexpectedly falls in love. The love distraction, a new city to explore, and the thought that climatologists did not predict this calamity keep him from pondering deeper issues about ecological disruption such as the butterfly effect—scientist Edward Lorenz’s idea that “some complex dynamical systems exhibit unpredictable behaviors such that small variances in the initial conditions could have profound and widely divergent effects on the system’s outcomes.”³² The young lover might have asked “What caused the volcano to unexpectedly erupt? What part does air transportation play in climatic conditions? How does environmental calamity result in new bonds between people? Can animals sense extreme weather disruptions?” He does think of the doomed bull, but it is unclear if he is empathizing or making a joke at its expense:

I flew to a Portuguese corrida [bullfight]—

A short trip, just for fun.

But then the pilot had to land the plane in London

So I called up my friends

And stayed over for a couple of days.

And from that day on,

Linda and I never been apart.

Not a single climatologist predicted a

³² Jamie L. Vernon, “Understanding the Butterfly Effect,” *American Scientist* 105, no. 3 (May–June, 2017): 130, <https://www.americanscientist.org/article/understanding-the-butterfly-effect>

scenario like this.

Maybe someone had a feeling—perhaps

the bull?...

perhaps the bull?...

A passage titled “Wealthy Mommy’s Song” epitomizes the explosion of tourism in ecologically fragile destinations that is contributing to biodiversity loss:

We explored the coral forests,

We climbed through their branches,

It certainly tired us, such density!...

What a relief that the Great Barrier Reef

has a restaurant and hotel!

We sat down to sip our piña coladas—

included in the price!

They taste better under the water,

Simply a paradise!

The woman’s appreciation of the Great Barrier Reef is tied to a package of luxury accommodations and services. She explores the reef with an attitude of dominance, a smugness associated with privilege. Later she recalls “Those coral horns, that

bleached, pallid whiteness...You have to see it, words cannot describe it!" She is clearly unaware that the coral is dying due to ocean warming, increased salinity, acidification, pollution, and overfishing. The stressed corals have expelled the symbiotic algae living in their tissues, causing them to turn white. This woman and the volcano lover do not recognize their complicity in toxicity and global warming. Their airplane flights and cruises contribute to carbon emissions and unhealthy waste streams.

Sun and Sea's actors mostly disavow or ignore what Morton calls *the ecological thought*—respect and connection to all living things, including those we may find frightening or strange.³³ Bourgeois characters like "the Wealthy Mommy," "the Workaholic," and "the Volcano Couple," are not concerned about the interrelatedness of all beings. In fact, they display willful or innocent ignorance of deep ecology. Nature is described as something separate, something which they struggle with, something they want to use.

Sun and Sea is a crucible of vignettes that indirectly reveal the neglect by humankind (as represented by individuals, and more obliquely corporate and government entities) of stewardship of the earth. The biological and man-made contaminants that infiltrate human and animal bodies through air, food, water, and soil, are literally shown and referenced on the stage. Metals, plastics and glass all make their way into the imagined ocean just off stage. In the "Chanson of Admiration" one beachgoer exhibits her ignorance of the harmful effects of ocean trash. She finds beauty in its unnatural colors. Her voice is light and the tempo upbeat:

³³ Morton, *The Ecological Thought* (Cambridge, MA: Harvard University Press, 2012).

Jellyfish dance along in pairs

With emerald-colored bags,

Bottles and red bottle caps.

O the sea never had so much color!

Trash becomes more personal in “Song of Complaint,” where a woman complains about the day-trippers who leave behind their detritus. She is irritated at the mingling of human and nonhuman waste on the sand she lies on. She wants to keep nature clean for her own immediate comfort:

What’s wrong with people—they come

here with their dogs,

Who leave shit on the beach, fleas on/the sand!

I come home from the shore, covered with

bites, and my skin itching like mad.

What’s wrong with people—they drink

beer in the heat of the day!

They spill it and it seeps into the sand,

Then it smells like a slum-hole!

Which then plays a nice duet with bites

of sandwich left behind—

It feels like lying all day by a homeless man!

These observations and considerations of trash are superficial. The “complainor” blames individuals for their irresponsible littering. She does not realize or care that corporate power and marketing lies behind the consumerism that creates endless litter. In fact, corporate responsibility and greed are largely left out of *Sun and Sea*’s narrative. The actors’ shortsightedness nevertheless speaks to the invisibility of most ocean pollution and its long-term hazards. Most people do not envision macroplastics (bottles, bags, containers) turning into microplastics (tiny fragments that merge with ecosystems). Over time, biological organisms will attach to undersea plastics, forming a microbial film. This film will make the plastic heavier and cause it to sink to the river or sea beds. It will develop an odor (dimethyl sulfide), and take on the visual characteristics of food that attracts fish.³⁴ Some plastics will hug the coastlines, and in a molten state, combine with stones, sedimentary grains, and other natural debris to form *plastiglomerates*.³⁵ Ocean plastics will cause the deaths of more than a million seabirds every year, as well as more than 100,000 marine mammals.³⁶

Sun and Sea provides multiple allusions to ocean trash, as opposed to photographic representations such as Chris Jordan’s series *Midway: Message from the Gyre* (2009 - current). (fig. 1.4) The series depicts the tangible, deadly effects of ocean

³⁴ Facts gleaned from a presentation by Katey Valentine at Art + Anthropocene Virtual Seminar Series, University of York, March 16, 2021. For an illustrated report on marine litter see Heather A. Leslie, “Macroplastics, microplastics and environment impact,” IVM Institute for Environmental Studies, March 12, 2014. https://www.rsc.org/images/Leslie_tcm18-239910.PDF

³⁵ The term *plastiglomerates* was coined by Canadian geologist Patricia Corcoran in 2012.

³⁶ Facts and Figures on Marine Pollution from Unesco. <http://www.unesco.org/new/en/natural-sciences/ioc-oceans/focus-areas/rio-20-ocean/blueprint-for-the-future-we-want/marine-pollution/facts-and-figures-on-marine-pollution/>

pollution on baby albatrosses by showing their decomposed bodies full of non-degradable plastic trash. The images are raw, direct, and undeniable. This is an important distinction between opera-performance and two-dimensional art forms such as photography. The songs stimulate the spectator's imagination and arouse emotion, whereas Jordan's pictures generate a visceral response.



Figure 1.4. Chris Jordan, *Midway: Message from the Gyre* #CF000313, 2009

There is one exceptional stanza, titled “3D Sisters’ Song,” that takes a position about the rapid decline of biodiversity in a climate-changed world. It is an elegy to vanishing nature sung by teenage twins. (fig. 1.5)



Figure 1.5. *Sun and Sea*, Venice Biennale, 2019, performance details (twins)

They represent the rising generation, presumably more aware and sensitive to the broader, long-term implications of climate change:

—I cried so much when I learned that/corals will be gone.

And together with the Great Barrier Reef

the fish would go extinct—

From sharks to the smallest fry.

—I cried so much when I learned bees

are massively falling from the sky,

And with them all the world's plant life/will die.

—I cried so much when I understood

that I am mortal,
 That my body will one day get old and
 wither.
 And I won't see, or feel, or smell ever
 again...

In this passage, we can sense these younger characters veering away from the horror of the existential threat their generation faces, and into a surreal, techno-utopian dream of survival without physical needs or connection to a damaged planet.³⁷

—My mother left a 3D printer turned on.
 And the machine began to print me out.
 When my body dies, I will remain,
 In an empty planet without birds, animals/and corals.
 Yet with the press of a single button,
 I will remake this world again:
 —3D corals never fade away!

³⁷ For reports on the use of biotechnology, bioengineering, and artificial intelligence in combatting environmental challenges see Renee Cho, "Artificial Intelligence—A Game Changer for Climate Change and the Environment," Earth Institute, Columbia University, June 5, 2018. <https://blogs.ei.columbia.edu/2018/06/05/artificial-intelligence-climate-environment/>. Philipp Aerni et al., "The role of biotechnology in combating climate change: A question of politics?" *Science and Public Policy* 43, no.1 (May 2015): 10. doi:1093/scipol/scv014. M. J. Taherzadeh, "Bioengineering to tackle environmental challenges, climate changes and resource recovery," *Bioengineered* 10, no.1 (Dec. 2019): 698-699. doi:10.1080/21655979.2019.1705065. PMID: 31847689.

——3D animals never lose their horns!

——3D food doesn't have a price!

——3D me lives forever!

More often, the humans in *Sun and Sea* just accept the enormous changes taking place before them. The performance actually revolves around Morton's notion of hyperobjects, which here include climate change, global warming, and ocean pollution. He writes somewhat equivocally that we must learn to adapt to hyperobjects since they are inescapable, and impact all realms of our lives from ecology to communication systems, to industrial supply chains. *Sun and Sea* engages with this notion, though not overtly. It metaphorically demonstrates acceptance of, and adaptation to hyperobjects through the nonchalance of the players, and the lack of words or actions that resist these outcomes. For example, in the "Song of Complaint" the now common off-kilter seasons put the "Complainer" in a strange mood, rather than an enraged one:

Everything is out of joint:

The beginning of May brought frost and Snow

And winter gives us buds and mushrooms...

You see, we had Christmas at our

farmhouse,

But this year, there was no frost, no snow,

it felt like it could be Easter!

Unusual, very unusual, it made for a
 very strange mood:
 In the morning, I rose before everyone else
 And I went into
 the woods—
 There was refreshing green moss,
 Just like in springtime!
 And as I walked the path, there beyond/ the well,
 I found three chanterelles!
 The end of December, how come?
 As granny liked to say:
 The end of the world!

The actor doesn't question the reasons for this phenomenon. Her rituals will continue; this is only a passive observation. Her apathy in the face of climate change reflects philosopher Bruno Latour's musings that "Through a complete reversal of the favorite trope of Western philosophy, human societies seem to be resigning themselves to playing the role of witless object, while it is nature that is unexpectedly taking on the role of active subject!"³⁸ The final chorus, written in capital letters for emphasis, speaks of human powerlessness against climate change's ability to greatly alter biodiversity.

³⁸ Bruno Latour, *Facing Gaia: Eight Lectures on the New Climatic Regime* (UK: Polity, 2017): 73.

Warming seas produce an overabundance of some species and the death of others.
Spectators can do nothing more than watch and wait as their secret fears are stoked:

THIS YEAR THE SEA IS AS GREEN
AS A FOREST:
EUTROPHICATION!
BOTANICAL GARDENS ARE
FLOURISHING IN THE SEA—
THE WATER BLOOMS.
OUR BODIES ARE COVERED WITH
A SLIPPERY GREEN FLEECE,
OUR SWIMSUITS ARE FILLING UP
WITH ALGAE,
EMPTY SNAIL HOMES, SWOLLEN
SEAWEED, FISH REMAINS,
AND ALL KINDS OF SHELLS...

Like ancient Greek choruses, this chorus offers a summary of the tragic big picture—the undeniable evidence of threatened and dying underwater life.³⁹ At the same time, it zooms in on individual bodies covered in algae.

³⁹ “Ocean Threats,” *National Geographic*, January 5, 2017.
<https://www.nationalgeographic.com/environment/article/ocean-threats>. Sarah Gibbens, “Ocean heat

The Second Body

A more imaginative interpretation of how the bodies in *Sun and Sea* contribute to climate change is inspired by science writer Daisy Hildyard's book *The Second Body*.⁴⁰ The premise is that all humans have two bodies—the one made of flesh and bone that we nurture on a daily basis, and the one that is more diffuse in the sense that we can't see or know all its possible interactions with the global ecosystem. Humans act individually and globally at once; we act both *in* and *on* the organic and inorganic world around us. Like the Gaia hypothesis, we are part of a chain of organisms that (until recently) act as one to maintain the conditions for life on Earth. I'd like to consider how the notion of first and second bodies operates in *Sun and Sea*.

Sun and Sea's actors perform with "first body" as they apply sunscreen, eat, play board games, adjust their lounge chairs and towels, sing, chase dogs and children, and play ball in real time. This body is attentive to physical sensations in the "Song of Complaint":

Recently, I stretched my blanket out—right
on the old remains of smoked fish—
It was all rotten skin and bones!
I could smell the stench as I lay down.

waves are killing underwater life, threatening biodiversity," *National Geographic*, March 4, 2019.
<https://www.nationalgeographic.com/environment/article/ocean-heat-waves-threaten-sea-life-biodiversity>

⁴⁰ Daisy Hildyard, *The Second Body* (London: Fitzcarraldo Editions, 2019). Thanks to Pietroiusti for bringing this book to my attention.

Turning on my stomach, a foreign body—

A champagne cork—poking my ribs!

The first body is the one that gets burned, itches, gets headaches, drowns:

Hand it here, I need to rub my legs...

'Cause later they'll peel and crack,

And chap.

Hand it I will rub you...

Otherwise, you'll be red as a lobster...

And the one represented by the Workaholic who experiences physical symptoms from the weight of expectation in the workplace:

I really don't feel that I can let myself

slow down,

Because my colleagues will look down

on me.

They'll say I have no strength of will.

And I'll become a loser in my own eyes.

Exhaustion, exhaustion, exhaustion,

exhaustion...

The second body is also physical but has a much wider network of relations and carbon footprint. It can be considered a hyperobject. This body consumes imported food—"The banana comes into being, ripens/ somewhere in South America/ And then it ends up on the other side of/ the planet"... "Snacking on super sweet dates imported from Iran." It wears cheap imported clothing—"swimming suits made in the factories of China." It travels endlessly—"My boy is eight and a half/ And he has been swimming in/ The Black,/ The Yellow,/ The White,/ The Red,/ The Mediterranean,/ Aegean seas..."

The second body is a user and plunderer. When vastly multiplied, it signifies the larger consumer society and the military industrial complex beyond the first body. These collective agents are the primary culprits of the environmental crisis. In addition to polluting, extracting, and unfairly appropriating land, these systems demand the relentless transportation of people, consumer products, and military arms across the oceans. "Siren's Aria" takes note of the political economy across the oceans:

Acidic Waves,

Ivory foam,

Rocking the boats full of canned goods,

tourists, fruits, and weapons.

Airplanes in the sky,

Ships sailing the sea.

ACIDY WAVES,
 IVORY FOAM –
 AIRPLANES IN THE SKY,
 SHIPS SAILING THE SEA...

The bodies (first bodies) on the stage appear vulnerable and small from the balcony perspective. But the second bodies gain in heft and consequence as they spread out exponentially across the planet using natural resources, damaging ecosystems, leaving huge carbon footprints. This expanded notion of the human body connects the immediacy of the performance with global consequences and an undetermined, climate-changed future. (fig. 1.6)



Figure 1.6. *Sun and Sea*, Venice Biennale, 2019, performance detail

The enhancing strategies—ambiguity, music, intermedial perception

Ambiguity, different forms of distancing, and circling around the critical issues of climate change are the cognitive strategies employed in *Sun and Sea*. The hyperobjects

in *Sun and Sea* are both acknowledged and not acknowledged. The actors may sing superficially about airplane travel, bullfights, out-of-season blooms, volcanic eruptions, and colorful oceans, but they do not seek causal connections or understand the environmental apocalypse before them. They avoid direct confrontation; they do not see their own complicity. The relationship of ambiguity to consciousness is a critical factor in evaluating art, according to neuroscientist Semir Zeki.⁴¹ Zeki has defined ambiguity in art as images/situations which are capable of many plausible interpretations, each one having equal validity with the others. The brain struggles to make sense of them, one micro-conscious state at a time. “The mechanisms used to instill meaning into this world are the very ones used to instill meanings into works of art. It is those basic mechanisms that artists have used so successfully.”⁴²

Ambiguity as a subtle means of communication is perhaps best understood by comparing an opposite approach. Joan Jonas’s *Moving Off the Land II* (2019), another work from the Biennale which focuses on the sea, is crystal clear in its message. *Moving Off the Land* is a large-scale installation of video, sculpture, drawing, and sound works that explores the possibilities of multi-species encounters through myth and drama.⁴³ (figs. 1.7, 1.8) There is no trace of anthropocentric hegemony over ocean life.

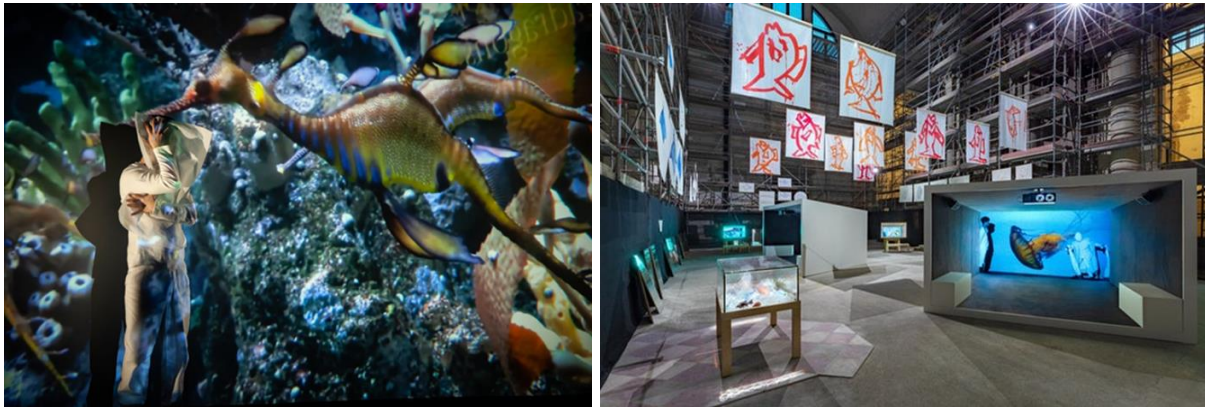
Jonas’s attunement with Morton’s ecological thought is revealed in the way she shows respect and connection to all living things. Drawings of fish function as banners raised high above human visitors. Whale sounds echo in the vast space. In videos,

⁴¹ Semir Zeki, “The Neurology of Ambiguity,” *Consciousness and Cognition* 13 (2004): 174.

⁴² Zeki, “The Neurology of Ambiguity,” 194.

⁴³ Joan Jonas, *Moving Off the Land II* premiered at Ocean Space, Chiesa di San Lorenzo, Venice March 24–September 29, 2019 and travelled to the Museo Nacional Thyssen-Bornemisza, Madrid February 25–September 13, 2020.

Jonas leaps over imagined boundaries into “the entangling mesh” of the ocean, where she engages in tender and loving relationships with sea creatures. Long-durational close-ups of octopi and seahorses reveal the agency and mental capabilities of nonhuman beings. The work doesn’t just give standing to the nonhuman—it is an epic portrayal of intelligent life beneath the sea and a drama of our potential symbioses with other species.



Figures 1.7 and 1.8. Joan Jonas, *Moving Off the Land II*, Venice Biennale, 2019

Whereas *Moving Off the Land* is straightforward in its respect and embrace of the sea’s inhabitants, *Sun and Sea* does not promote a clear philosophical position. Nature is rarely accorded an intrinsic value outside of human use, though some of its sublime aspects are acknowledged. The characters’ attitudes vacillate between awe, disgust, fear, indifference, and admiration. The more profound questions about human entanglements with nature must emerge from within the audience—knowing and not knowing Nature, whether to yield to or control it, marvel at its awesomeness or ignore it, conserve and restore or abuse it. These themes will pop in and out, come fully to the front then disappear into the background. This rhythmic cycle of open-ended observations and questions mirrors the continuously looping score and the continuous

motion on the beach. The questions are never answered, the music never ends, the activity never stops.

The Psychology of Music and “Intermedial Perception”

Sun and Sea’s sung narrative allows for a slow engagement with climate change issues while simultaneously appealing to a variety of emotions. This is accomplished primarily through the music. Music “moves us” more than the written word or the visual arts, according to psychologist Ellen Winner.⁴⁴ She notes that music has exceptional emotional power because “it mirrors the dynamic structure of emotional life through tonal structures like growth and attenuation, flowing and slowing, conflict and resolution, speed, arrest, excitement, calm, dreamy lapses.”⁴⁵ Emotion can be a non-rational route to understanding hyperobjects and their effects. Further, strong emotions can be a catalyst for change because they are neurologically linked to the prefrontal cortex of the brain, which regulates behavior and rational decision making.⁴⁶

Music is able to elicit more powerful feelings than other arts due to several factors. The evocation of sorrow, yearning, and joy in music are sounds that mimic those qualities in a person’s voice. Music is temporal; the longer we listen, the more time for emotions to arise. Music has a spatial quality, it envelops us. We cannot turn it off by looking away.⁴⁷

⁴⁴ This assertion is based on years of experimental studies at the Arts and Mind lab at Boston College and Project Zero at Harvard University. Ellen Winner, *How Art Works: A Psychological Exploration* (New York, NY: Oxford University Press, 2019): 59.

⁴⁵ Winner, quoting philosopher Susanne Langer, 34.

⁴⁶ Antonio Damasio, *Descartes' Error: Emotion, Reason and the Human Brain* (New York: Penguin, 2005).

⁴⁷ Winner, *How Art Works*, 59.

Within moments of entering the *Sun and Sea* venue, the spectator is caught up in the enveloping sound of a synthesizer and singing voices. The score provides a constant backdrop to the action. The music is seductive. In it we identify sorrow, yearning, joy, uneasiness, love. Our human instincts connect to the voices of the vacationers, especially when sadness is expressed. Winner explains, “the sadness felt from the music makes us feel a connection to the larger human experience of sadness in human life, not just in one’s own life”⁴⁸ Though the Lithuanian collective denies intentional manipulation of emotions, the tonal structures of the songs and voices create a sense of both human vulnerability and confidence in regard to nature. The melodies, rhythms, and patterns evoke fear, joy, sickness and death, separation, and a desire for beauty and connection. I believe that this engendered empathy, which science sees as both an emotional and cognitive response, can move beyond human relationships toward other forms of life.

The human narratives can be compared to the life processes of plants and animals and landforms: “When my body dies, I will remain,/ In an empty planet without birds, animals/ and corals.” Through the music, we can envision symbioses of algae and corals, then the death of those corals; a volcanic eruption that destroys but also replenishes the soil; algal blooms and plastics killing off marine life; fish struggling to absorb oxygen; the decomposition of food waste. Lapelyté’s score evokes the complexity of life and the balance between the individual and the community. The singing emanates from unexpected locations across the stage, shifting from solos to choruses. Each stanza is a building block that takes the visitor on a journey through the

⁴⁸ Winner, *How Art Works*, 54.

life cycle. Music's ability to render this quality was expressed by John Dewey nearly one hundred years ago: "...the power of art to take a natural, raw material and convert it, through selection and organization, into an intensified and concentrated medium of building up an experience, applies with particular force to music."⁴⁹

The visitor is lulled into an ambiguous zone of relaxation, sadness, apathy, and curiosity. The contrast of the banal beach activities with the written word and the beauty of the music stimulates the senses while creating an environment of inquiry. Art historian and media scholar Hannah Higgins calls this interaction "intermedial perception."⁵⁰ She argues that when the boundaries between media are fluid, the senses will work cross-modally to produce a multi-layered aesthetic experience. The combined effect of the senses, in this case hearing, seeing, and kinetics (movement around the stage and in the balcony) produces heightened perception. Higgins points to an example where "a subject [person] hears a sound, the head turns toward it so as to see its source and to position itself frontally toward the origin of the sound. Here, eyes and body contribute to the subject's ability to learn from what is, strictly speaking, a sound."⁵¹ This happens often in the balcony of the armory where one strains to find the singer on the crowded stage. The visitor may scan the beach with her eyes or move around to find the source, and by chance find other interesting sights to linger on. Even watching the body language of the audience can provide new ways of connecting to humanity and understanding the piece's effectiveness. Above all it is the music which makes the emotional appeal and draws us into the conversation. One particularly

⁴⁹ John Dewey, *Art as Experience* (London: G. Allen, 1934): 238.

⁵⁰ Hannah Higgins, "Intermedial Perception of Fluxing Across the Sensory," *Convergence: The Journal of Research into new media technologies* 8, no.4 (Winter 2002): 59-76.

⁵¹ Higgins, "Intermedial Perception," 64.

melodic solo sung by a young woman of color pulls at the heart and refocuses our attention to natural beauty, “What a sky, just look, so clear! Not a single cloud... What is there?—seagulls or terns? I can never tell/ O la vida La vida...”

Pietroiusti observes,

Four or five meters above *Sun & Sea (Marina)*, we hover in the middle distance, as do its songs, poised between the immediate presence of its characters on the one hand, and their semi-conscious, semi-articulated insights on the other. Thoughts which pass through them, linger a second and float by. Eventually, something akin to a shared consciousness begins to emerge. In an opera, this reveal takes the form of a choir—from strangers on the beach comes harmony. Of course, nobody but us up here, libretto in hand, seems to be the wiser.⁵²

Theater Ecologies

Up to this point I have discussed how *Sun and Sea* engages thematically with environment and ecology and how ambiguity, music, and mixed media work to intensify those themes through emotion and perception. Can a performance also *be* ecological in a material way? Can it *be* an ecosystem itself? These are questions posed by theater scholar Baz Kershaw in his book *Theatre Ecology: Environments and Performance Events*.⁵³ *Sun and Sea* is a space of ecotones—regions of transition between ecological

⁵² Pietroiusti, *Sun & Sea (Marina)*, 2019.

⁵³ Baz Kershaw, *Theatre Ecology: Environments and performance events* (Cambridge: Cambridge University Press, 2007).

communities—of energy flow, and symbioses. This spatial fluidity, and the lack of a proscenium stage, gives the audience a sense of oneness with the actors. But the production's logistics are not entirely environmentally friendly.

Sun and Sea was not originally intended for Venice, but the change in venue gave it a new salience in terms of theater ecology. The first evidence of compromised ecologies appears outside the performance space. The venue is the site of a former naval armory in the Marina Militare complex. The building is a heavy, dark, post-industrial artifact. Situated adjacent to a large lagoon that joins with the Adriatic Sea, it represents Venice's historic mercantile and military might. Lagoons are coastal ecotones which sustain a diversity of species. Since its foundation, the Venetian Republic considered Venice and its lagoon as a single entity, a thriving commercial and residential complex. Over the past century, this interdependent environment has been heavily altered by intense anthropogenic interventions. Sea-level rise, erosion, pollution, fishery activity, and wave motion have all contributed to a crisis of the Venice lagoon system. The city of Venice has literally been sinking over the last centuries, with a drop of approximately 23 cm in just the last 100 years.⁵⁴

Sun and Sea's location in an ecotone is laden with irony. The sea has always been a rich resource in terms of trade and commerce, and it was an entity that kept occupying forces out. In other words, it was of use to Venetians. Their love for the sea, and their power over it, is enacted annually in a symbolic marriage ceremony. In the first such ceremony, around a thousand years ago, Doge Pietro II Orseolo started the tradition of sailing into the Adriatic Sea and throwing a ring into the water, while

⁵⁴ Dimitri D. Deheyne, Lisa R. Shaffer, "Saving Venice: Engineering and ecology in the Venice lagoon," *Technology in Society* 29, no. 2 (April 2007): 206-7, doi:10.1016/j.techsoc.2007.01.014.

speaking words that translate to “I wed thee, O Sea, in token of true and lasting dominion.”⁵⁵ But the dominion and abuse over the sea has since backfired, and the sea is taking revenge. As it rises, Venice’s infrastructure, monuments, museums, hotels, shops, and restaurants—its economy in general, is crumbling and sinking. As if in response to the sea’s vulnerability to human behavior and its ongoing volatility, *Sun and Sea*’s elegies drift out to the lagoon.

Kershaw hypothesizes that theaters and performances behave as ecosystems.⁵⁶ An ecosystem or biome describes a single environment and every living organism and non-living factor that is contained within it or characterizes it, and all the interactions between its different elements.⁵⁷ *Sun and Sea* functions as an ecosystem in physical and imagined ways. Human and biological flux, adaptation, and death are at the center of the story. The performance merges nature and built environment, spectacle and spectator, human and non-human species. The performance space is a biome in flux. The former armory is now a stage with a sand beach replete with humans, flea-ridden dogs, food, and plastics. The humans are vacationers who came from elsewhere, temporarily share the sun, sea, and sand with others, and will return to their home habitats slightly changed: “I come home from the shore, covered with bites, and my skin itching like mad.” Children play with their dogs in the sand, then play in the ocean. Couples talk, apply sunscreen, eat, swim, use electronics. Food scraps will decompose

⁵⁵ Kat Eschner, “Venice Has Been Married to the Sea for Over a Thousand Years,” *Smithsonian Magazine*, May 26, 2017, <https://www.smithsonianmag.com/smart-news/venice-has-been-married-sea-over-thousand-years-180963370/#:~:text=The%20ocean%20was%20a%20central,during%20Orseolo's%20reign%2C%20he%20writes>. The ceremony still exists, though the symbolic meaning has changed numerous times over the centuries.

⁵⁶ Kershaw, *Theater Ecology*, 15.

⁵⁷ Biologydictionary.net Editors, “Ecosystem.” Biology Dictionary. Biologydictionary.net, May 21, 2019. <https://biologydictionary.net/ecosystem/>.

in the sand or get picked at by birds and insects. Inorganic matter will be transported and live forever in landfills and the ocean—“What’s wrong with people—they come here with their dogs, Who leave shit on the beach, fleas on the sand!...” Eventually, the armory floor will disappear when the real sea rises. Like the life cycle, *Sun and Sea* will run again in different venues.

Ecosystems depend on energy flow from a source (the sun) through various food chain levels, to an interactive population of organisms. Kershaw posits the theater as a site of energy circulation. Energy is present in the theater itself, in the performance, and between the actors and the audience.⁵⁸ Energy transfers take place in *Sun and Sea* in multiple ways. The actors and the music are the visible and audible sources of energy. The open stage supports a flow of energy, letting in fresh air, a revolving cast of extras, and new spectators every twenty minutes. Another source of energy is the constant motion of people and props on the beach. Singing has an emotional charge which is another sort of energy transfer. Communication occurs between the actors and the audience as the music wafts up and envelops them. The spectators give off energy as they gaze and shift their positions to accommodate different views of the stage. Ultimately, they carry the affective energy of the performance out into the world.

This flow of energy translates into emotional and anecdotal knowledge about climate change. The emotional quotient comes from the raw vulnerability of the singers, the sad melodies and tempo of the score, and the lyrics in the libretto. The amassing of anecdotal knowledge through the arias can be compared to a prosecutor building a legal case. The individual narratives are like witness testimony to environmental

⁵⁸ Kershaw, *Theater Ecology*, 275.

injustice and its backlash. As the evidence mounts, so too does the energy in the courtroom (theater). The spectator is like a juror who, during the trial, is having an inner conversation. Once outside the theater, individual thoughts burst into meaningful discussions amongst spectators.

Another of Kershaw's theoretical constructs is the "paradoxical performance," based on author Colin Talbot's notion of man as a paradoxical primate. Human beings can appear to be socially malleable, yet have an inherited set of behavioral instincts based on evolutionary needs.⁵⁹ *Sun and Sea's* libretto is filled with paradox, "a situation, person, or thing that combines contradictory features or qualities." The actors display a combination of opposing behaviors like selfishness vs. altruism, aggression vs. conciliation, awareness vs. apathy, appreciation vs. ingratitude. We also find abundant examples of the contradictions that might come up in everyday life—for example, the Wealthy Mommy who is in a rush for her son to see the world's most enchanting seas but is ignorant of the dying corals and her carbon footprint. Or the author who can only cure his massive headache with shrimp though he is a professed vegetarian. A "Song of Admiration" for the blue skies and seagulls is followed by a "Song of Complaint" about the stench and filth on the beach. The ocean's extraordinary surface color is actually due to eutrophication or floating plastic. Teenagers who lament biodiversity loss but anticipate regenerating animals through 3D printers. A cancelled plane trip (an ending) that results in a love match (a beginning). The Workaholic who finally takes a vacation and is nevertheless miserable. The whole performance is a paradox, from the title *Sun*

⁵⁹ Kershaw, *Theater Ecology*, 102. Colin Talbot proposes a new framework for man as a paradoxical primate using an evolutionary perspective but drawing on existing social sciences. See Talbot, *The Paradoxical Primate* (Imprint Academic, 2005).

and Sea, which hints at relaxation and fun but is actually a scene of quiet apocalypse, to the array of plastic and metal products whose sourcing and production contributes to climate change, to the human desire to sunbathe despite the hole in the ozone layer which allows for skin cancer, to the human desire to enjoy the sea's benefits without advocating for its protection and conservation. Even writer Grainytc admits to being a paradoxical primate: "My position may not be anthropocentric, but I do live in an anthropocentric world. I function according to its laws. I consume. Humans do have an intellect of sorts, but they are still the same part of nature as is a cheetah or a snail."⁶⁰

The paradoxes and inconsistencies continue in the wider ecology of the production. On the positive side, there is the social and economic ecology that extends into the local community—inviting locals in as volunteer extras on the set, supporting their restaurants, stores, and hotels, and using a local printing shop for the exhibition catalogue. Local prison inmates were invited to a silkscreen workshop where they printed the cover of the opera's LP record. The long entrance lines to the performance promote sociability and connection among visitors.

Conversely, *Sun and Sea* as a travelling theater production is problematic in regard to other environmental issues. Stage props, cast members, and crew had to fly to Venice from Lithuania, incurring huge carbon costs. Sand had to be transported from its natural habitat, perhaps disturbing that ecosystem. The Biennale itself, like most art fairs, generates a colossal carbon footprint as hundreds of thousands of visitors, artists,

⁶⁰ Vaiva Grainytc in conversation with poet Giedrė Kazlauskaitė in "Poetry like a SPA," *Versopolis Poetry*, September 30, 2019, <https://www.versopolis-poetry.com/news/401/poetry-like-a-spa>

curators, and journalists from around the world arrive by plane, train, car, or boat.⁶¹ The *vaporetti* ferry them across the lagoon several times a day, emitting diesel fumes. The amount of excess organic and inorganic waste that accompanies such crowds is especially problematic, since it must leave the city daily by barge.⁶² An inherent dilemma plagues all international art fairs—are the benefits of featuring environmentally conscious art worth the environmental costs? In the case of *Sun and Sea*, the shift from a limited Lithuanian audience to the Biennale’s international context could be seen as a justifiable tradeoff. These positive and negative ecological dimensions of *Sun and Sea* can be added to the list of paradoxes surrounding the production.⁶³

Intention vs. Reception, framing the visitor context

Interviews with the artists, the curator, and spectators of *Sun and Sea* revealed contrasting views on environmentalism, artistic aims and outcomes. Numerous articles and reviews provided supplemental data about reactions.⁶⁴ Overall, artistic intentions diverged from spectator reactions. Curator Pietroiusti feels that *Sun and Sea* “moves people by accident,” and she denies any curatorial intent to manipulate emotions, citing

⁶¹ Kate Brown, “The Art Industry Is Grappling With How to Shrink Its Carbon Footprint. But Will Collectors Do Their Part?,” *Artnet News*, December 4, 2019. <https://news.artnet.com/art-world/art-shipping-carbon-emissions-collectors-1719063>.

⁶² “What comes into Venice must be removed again via a complex collection and recycling system. Every day an army of sanitation workers knocks on every door in the city, collecting waste to be ferried away on barges. The same rules and fines, however, do not apply to tourists—despite the fact that during high season the bins around Piazza San Marco have to be emptied every half an hour.” Paula Hardy, “Sinking city: how Venice is managing Europe’s worst tourism crisis,” *The Guardian*, April 30, 2019. <https://www.theguardian.com/cities/2019/apr/30/sinking-city-how-venice-is-managing-europes-worst-tourism-crisis>.

⁶³ In addition to the carbon costs, *Sun and Sea*’s production costs were enormous. Organizers in Venice estimated the cost at \$3 a minute to stage. Its staging in Berlin in July 2021 cost \$153,500. See Kate Brown, “‘Sea and Sun [sic],’ the Harrowing Performance-Art Climate Opera That Won Top Honors at the Venice Biennale, is Now Going on a World Tour,” *Artnet News*, July 16, 2021. <https://news.artnet.com/art-world/sea-sun-world-tour-1989601?>

⁶⁴ See note 17.

the physical distance between stage and balcony and the minimalistic score. Her claims about the aerial view rendering a “defamiliarizing aspect,” and a “thereness and thatness of it all” (meaning the banality of the scene) support a sense of affective neutrality.⁶⁵ Indeed, there have been instances where the performance was deemed to have fallen flat emotionally and intellectually due to impatience with the operatic form itself, the necessity of the libretto for comprehension, the obscurity of the message, or the lack of stage action.⁶⁶ Arguably, for most, this defamiliarizing aspect is countered by the display of human vulnerability through nearly naked bodies, bared souls, and songs filled with pathos.

Art director Barzdžiukaitė does not want to be perceived as pushing an environmental agenda or making a political statement. She claims, “My artistic or creative inspiration or state of mind is prior to the political or activist. I’m just intrigued by some interesting context. It just has so many layers I’m in an honest position to bring all those layers out. I wouldn’t like to be called an activist. I try to make it in a way that it’s not hitting....not forcing [people] to think in some direction.”⁶⁷ “At some point, Vaiva was taking off all the words which were dealing with ecological issues directly.”⁶⁸ The piece comes across as nonjudgmental and there is no clear call to action. The spectator is left to decide the ethical and moral implications on their own.

Actually, many paradoxes exist within their stated neutrality—the emotion and excitement generated by the work itself, the poignancy of the lyrics and haunting beauty

⁶⁵ Pietroiusti, interview.

⁶⁶ The author discussed these reactions with a few spectators in Venice and Philadelphia.

⁶⁷ Barzdžiukaitė, interview.

⁶⁸ Barzdžiukaitė quoted in Joshua Barone, “A Climate Opera Arrives in New York, With 21 Tons of Sand,” *New York Times*, September 14, 2021. <https://www.nytimes.com/2021/09/14/arts/music/sun-and-sea-bam.html>.

of the music, the forced co-mingling and shared sense of calamity with the spectators in the dark balcony, alongside the nurturing warmth of the beach on a summer day. The use of personal stories is a highly effective way of relating to the audience.⁶⁹ In one exit survey, most spectators claimed to be very moved. When asked how *Sun and Sea* affected them, their responses included “sad,” “serene,” “comforted,” “cried,” “nurtured,” “hypnotized,” “senses involved,” “peaceful yet makes you want to cry at the same time.”⁷⁰ The stage direction may be undramatic in the traditional sense, but the music is highly affective.⁷¹ Listening brought some audience members to tears and that reaction caused others in the audience to empathize. This “compassionate voyeurism”⁷² is one indicator that *Sun and Sea* may provide a path to change.

There are other disconnects between creative intention and the audience. The libretto was rewritten in English for the Biennale. But many of the international visitors do not read or understand spoken English. So even though there is pleasure in watching and listening to the performance, there can be difficulty in understanding the lyrics. This adds another layer of clouded meaning to an already ambiguous work of art.

Sun and Sea has another limitation in terms of its audience. It assumes that most spectators have vacationed on a beach or at least know what one looks like. Yet the concept of such a vacation does not exist in many cultures. Considering economic and

⁶⁹ Studies have shown that viewers relate most to an artwork or documentary if it contains a story. Liselotte J. Roosen and Christian Klöckner, “Art and Documentaries in Climate Communication: Experiencing the Reality of Climate Change and Leading the Way to Change,” *Art Research International* 5, no. 2 (2020): 530. The story or meaning should either be self-evident (which makes it appealing for a larger number of participants) or flow from contemplations or discussions.

⁷⁰ The author conducted an informal exit survey of about 25 visitors in September 2019.

⁷¹ The author’s survey found that the music was the most affective aspect of the performance.

⁷² Dr. Karen Stock used this expression in her lecture, “Building Castles in the Sand and Sparking Sympathy in *Sun & Sea (Marina)*,” Art + Anthropocene virtual seminar series, University of York, March 15, 2021, <https://artanthropoceneyork.mystrikingly.com/>.

social disparities, does a piece about privileged vacationers' indifference to climate change have global resonance? Or does it conceptually widen the gap between those that live within relative environmental stability (if only illusory or temporary) and those whose livelihoods and daily experience are impacted by a changing sea?

Conclusion

The spectators of *Sun and Sea* are enriched in three ways—visually, by a moving mosaic of bodies, auditorily, by the wafting music and voices, and for many, the libretto. The intermedial enrichment leads to new ways of absorbing and assimilating issues around climate change, ways that can supersede scientific data. The performance dismantles the typical perception of relaxed beach vacationers in order to open up a space for critical contemplation of our place in the earth's ecosystem.

Sun and Sea does not aim to offer tangible solutions to the crisis. In fact, it is overflowing with apathetic characters who have noticed the dramatic changes in the biosphere, yet do nothing to alter its course. Is this ignorance, or is it the benign resignation that Latour has observed? Or have they normalized an existential threat? The disturbing reality on the stage causes the spectators to think more deeply about their entanglements with climate change. For the ecologically astute, it is a subtle call for revisionist behavior. For others, it might take multiple readings and viewings, and seeing other audience reactions, to help them imagine something akin to Morton's ecological thinking.

Every aspect of the performance feels ephemeral and open-ended, from the fluid staging, to the unanswered questions in the libretto, to the looping musical score.

Its power lies in its ability to evoke emotions and stir imagination while raising individual and collective concerns and fears which must be addressed if we are to take progressive action towards sustainability. Some of this agency is derived from the energy of the performance and its affect, which flows from the actors to the spectators to the community at large. The performance, through a clever exposé of the issues, generates existential questions: How many of us are paying close attention to the changing biosphere? Why does climate denial still exist? If everything and everyone are ecologically connected, why is there still a sense of disconnectedness on the planet? Are we unconsciously adapting to the twenty-first century's unique ecological threats? Can empathy alone solve the crisis? While the audience ponders these ecological thoughts, the slow grinding apocalypse continues.

Chapter 2

Edward Burtynsky's *The Anthropocene Project*: Deep Dive or Aerial Perch?

Traditionally one does not think of a photography exhibition as an immersive experience. The expectation is to stand in close proximity to a singular image, hung at eye level, and have an intimate encounter with the people or objects that inhabit the picture. Typically, it is a subdued experience rather than an overwhelming one.¹ In *Anthropocene*, an exhibition of Edward Burtynsky's photographs, film clips, and augmented-reality encounters, this sense of intimacy is gone, replaced by the spectacle of sublime imagery, remote geographies, global disfigurement, and industrial level extraction and processing of raw materials. (figs. 2.1, 2.2, 2.3)²

¹ Notable exceptions include the work of Andreas Gursky, Thomas Struth, Jeff Wall, and David Maisel, all of whom use large-scale formats (over 44 inches) that draw people into a variety of provocative or dramatic natural and man-made environments.

² All photographs by Edward Burtynsky unless otherwise noted. They are published in the artist's book *Anthropocene* and appear in the travelling exhibition *Anthropocene* (2018–ongoing). Exhibition venues will appear in captions. Edward Burtynsky, Jennifer Baichwal, Nick De Pencier, et al., *Anthropocene*. First ed. (Göttingen, Germany: Steidl, 2018).



Figure 2.1. Edward Burtynsky, installation view of *Anthropocene*, Art Gallery of Ontario, 2018

At every turn, the visitor is engulfed by large-scaled images³ of the relentless human assault on the earth, water and animals. The subjects include open-pit and underground mining, petrochemical plants, deforestation, oil bunkering, landfills, diverted and polluted water, the burning of elephant and rhinoceros' tusks, and the eclipsing of natural land forms with cars, highways, and residential development. Clearly, the pictures are meant to provoke contemplation of global ecological disasters, many of which lead to climate breakdown.

³ The framed works in the exhibition measure either 46.5" x 62.5" or 58.5" x 78".



Figure 2.2. *Anthropocene*, Installation view, Art Gallery of Ontario, 2018



Figure 2.3. *Anthropocene*, Installation view, Malmö Museum, Sweden, 2020

Amidst scenes of explicit devastation, there are aesthetically beautiful, mysterious images such as *Uralkali Potash Mine #4* which offer an emotional and cognitive reprieve from the horror.(fig. 2.4) However, this reprieve is cut short by the label, which reveals the subject and the source of this scenic wonder—the underground mining of potash, which has caused giant sinkholes throughout the town of Berezniki, Russia. The tension between the aforementioned subjects and the paradoxical beauty of the photographs is referred to as the *toxic sublime* or the *industrial sublime* by journalists and scholars in the environmental humanities.⁴



Figure 2.4. *Uralkali Potash Mine #4*, Berezniki, Russia, 2017

⁴ Though environmental rhetoric scholar Jennifer Peeples is often credited with introducing the term toxic sublime to the framing of photographs, including Burtynsky's in 2011, journalist and editor Blake de Pastino, in 2001, applied the term to a Burtynsky photograph in a group exhibition. See Blake de Pastino, "The Toxic Sublime," (review of "The Altered Landscape" at the Scottsdale Museum of Contemporary Art) *Phoenix New Times* (Sept. 13, 2001), <https://www.phoenixnewtimes.com/arts/the-toxic-sublime-6414580>; J. Peeples, "Toxic Sublime: Imaging Contaminated Landscapes," *Environmental Communication* 5, no. 4 (December 2011): 373-392; C. Kane, "The Toxic Sublime: Landscape Photography and Data Visualization," *Theory, Culture & Society* 35, no.3 (2018):121-147, doi:10.1177/0263276417745671; Carol Diehl, "The Toxic Sublime" (Edward Burtynsky), *Art in America* (April 2005); Joshua Schuster, "Between Manufacturing and Landscapes: Edward Burtynsky and the Photography of Ecology," *Photography and Culture* 6, no.2 (2013):193-212, <https://doi.org/10.2752/175145213X13606838923318>.

Various and inconsistent reactions—horror, fear, dismay, disgust, and shock vs. enjoyment, wonder, awe, and aesthetic delight—are provoked by Burtynsky's work. The aesthetics and subjects in his work appeal to a wide range of audiences, from art museums to corporations to private collectors.⁵ Collaborations with *The Anthropocene Project* include the Fondazione MAST (Bologna) and the Malmö Museer (Sweden) in 2020, and the *Anthropocene Education Program* with the Royal Canadian Geographical Society and Canadian Geographic Education. The artist's robust roster of museum and gallery exhibitions in Europe and North America was stalled during the pandemic of 2020-21, but quickly resumed.⁶ He is in constant demand on the lecture and interview circuit in Canada and the United States.⁷

Despite its popular and institutional appeal, the ambiguous nature of the work causes disagreement about its intent and effectiveness in communicating deep-seated and temporal issues of environmental injustice and climate change. For example, art historian T.J. Demos and communications studies scholar Jennifer Peebles have criticized Burtynsky's work for privileging aesthetics over criticism of petrocultural culture, erasing labor and questions of ownership, universalizing responsibility, and eliminating many elements of a toxic narrative.⁸ Others, like environmental studies scholar Sarah

⁵ Museum collections include the Metropolitan, Tate Modern, Stedelijk, and Reina Sofia. Corporate collections include J. P. Morgan Bank, Microsoft, AstraZeneca, Hunt Oil Company, Calgary.

⁶ Burtynsky's work has been shown primarily in the west; the few exceptions are exhibitions in Singapore and Hong Kong (2014, 2017), Istanbul (2017), and Freemantle, Brisbane, Geraldton, and Melbourne, Australia (2008–2010).

⁷ Burtynsky has been an invited speaker at TED talks, symposia on philosophy, environment, and design futures, at universities and museums, world summits on innovation, and foundations. He is in demand for television, radio, and podcast interviews. Burtynsky's various and sundry professional activities and collaborations can be found on his website, <https://www.edwardburtynsky.com/>.

⁸ See T. J. Demos, *Against the Anthropocene* (Berlin: Sternberg Press, 2017), 19, 61, 64–65 and Jennifer Peebles, "Toxic Sublime," 385.

Ray, acknowledge and accept the sharp criticisms and the limitations of Burtynsky's toxic beauty, but nevertheless find the toxic sublime useful for exposing viewers to environments and processes that they cannot comprehend or perceive, connecting them with the sources of the products they consume, and allowing them to question and contrast the values of beauty and ugliness in relation to environmentalism.⁹

The scale and seriality of the images reinforce the notion that we live in a world defined by accelerated human impact that has gone too far. Yet in interviews, on his website, and in his book *Anthropocene*, Burtynsky repeatedly states that he is not being proscriptive or laying blame on anyone in particular. The distinction or disconnect—between the impartial aesthetics and the hidden underlying advocacy, is what makes the work provocative. By decontextualizing the sites and not taking a position, the artist leaves the viewer to contemplate the “facts,” as opposed to reimagined or subjective segments of reality.

The museum exhibition is just one piece of *The Anthropocene Project*, self-described as “a multidisciplinary body of work combining fine art photography, film, virtual reality, augmented reality, and scientific research to investigate human influence on the state, dynamic, and future of the Earth.”¹⁰ The term “investigate” seems to place the project in a realm of objective inquiry, but in fact its primary stance is one of advocacy. The viewer is manipulated cognitively, visually and viscerally as the artist knits together subject matter, aesthetic beauty, and affective encounters. The ambiguous nature of the images causes the viewer to linger and tease out multiple

⁹ Sarah Jaquette Ray, “Environmental Justice, Vital Materiality, and the Toxic Sublime in Edward Burtynsky's Manufactured Landscapes,” *GeoHumanities* 2, no. 1 (May 13, 2016): 203–219.

¹⁰ As stated on the project's website. <https://www.edwardburtynsky.com/projects/the-anthropocene-project>

meanings. Additionally, by conveying the omnipresence of massive systems of disruption and displacement, the project fosters a growing uneasiness about the fate of the physical planet. Through all these mechanisms, *The Anthropocene Project* functions as a work of subliminal environmental activism on the part of the artist. Rather than protesting graphically against the agents of environmental destruction (either with inflammatory text-embedded images, or showing activists at work at compromised sites, or showing people being sickened by toxicity), Burtynsky offers mounting pictorial evidence of a decaying natural world. The activism comes in the form of creating an indelible awareness and affect, which in turn can lead to action and policy changes. This thesis will be argued via a close reading of formal elements and an ecocritical lens, while drawing from film and communication studies and the neuroscience of embodied cognition and ambiguity.

New Ways of seeing the anthropogenic world (from afar)

“We now have to recalibrate our sensorial systems to adjust to contradiction, catastrophe, and ecological volatility born of human activities that override and neutralize long-standing histories of local knowledge....The Anthropocene has altered the terms and parameters of perception itself.”

—Amanda Boetzkes from *Art in the Anthropocene*¹¹

¹¹ Amanda Boetzkes, “Ecologicity, Vision, and the Neurological System” In *Art in the Anthropocene: Encounters among Aesthetics, Politics, Environments and Epistemologies*, ed. by Heather M. Davis and Etienne Turpin (London: Open Humanities Press, 2015), 272.

Until quite recently only a few communities lived close enough to ecological/environmental/climate breakdown that they could actually feel, taste, hear or smell it; those in the affluent global north were relatively removed.¹² Their only connection to the crisis may have been through photojournalism. Burtynsky and other photographers provided a much wider world view of visual ecological information. Then as now, artists play a role in presenting environmental transformation, but what kinds of interventions are taking place? Are they revelatory or opaque, accusatory or benign, politically activist or neutral? Can they reconcile the temporal and spatial vastness of the systems and agents that lead to our biosphere's breakdown with a single visual experience? *The Anthropocene Project* operates on all those levels, but essentially derives its impact from the divide between the seemingly neutral aesthetics (even if labelled the toxic sublime), and their countervailing effect.

Burtynsky takes on the challenge of interpreting the term *Anthropocene* for the general public as well as specialists. By using this contested term for all aspects of his project, he is subject to the same criticisms levied against the concept,¹³ even as he attempts to remain neutral. The multimedia *Anthropocene Project* (2018–current) is both

¹² Many of the works in *The Anthropocene Project* (2009–2017) were made just before the global north began experiencing uninterrupted extreme weather events—catastrophic hurricanes and floods, deadly heatwaves, long-lasting drought, agricultural blight.

¹³ Those criticisms question the term and concept on several fronts—its lack of geographical specificity; exactly when it began; naming an era after humans (anthropos); blaming the entire human race for problems caused by a relative few; determining the mix of human nature vs. culture's responsibility. Some academics prefer the terms *Capitalocene*, *Petrocene*, *Plantationocene*, *Misanthropocene*, *Terracene*, and *Chthulucene*, which target more specifically the forces underlying the biosphere's transformation and the matrix of human/nonhuman relationships within these systems. See T. J. Demos, Emily Eliza Scott, and Subhankar Banerjee, eds., *The Routledge Companion to Contemporary Art, Visual Culture, and Climate Change* (New York: Routledge, 2021), 420. For a brief summary of the criticisms see [The Editors], "The Term 'Anthropocene' Is Popular—and Problematic," *Scientific American*, Dec. 1, 2018, <https://www.scientificamerican.com/article/the-term-anthropocene-is-popular-and-problematic/>.

a highly compelling aesthetic encounter and one which forces a reckoning with agents of destruction, whether corporate, military, or state, and creates a space where audiences can speculate about their ethics and consumptive behaviors which allow these practices to flourish. Further, the various contexts in which the project is displayed and absorbed make it a broad-based educational tool for both lay and specialist audiences. Part of that education includes self-reflection about how we interpret and react to images of our compromised earth. Education scholars Stevens and Wainwright ask of the exhibit, “In what ways are we becoming complicit in a treachery of images by appreciating aesthetically beautified photographs that anaesthetize viewers in order to regulate their exposure to anthropocentric scenes of horror?”¹⁴ Whether Burtynsky’s work, and the toxic sublime in general, anaesthetizes us or prods us into an agitated state is a continuing debate.

A Penchant for Forests, Factories, and Danger

Burtynsky’s understanding of the world was engendered by opposites—a passion for nature in his native Ontario, and the necessity of working in mines and factories to meet his financial needs.¹⁵ His identity was strongly shaped by his father, an immigrant farmer from Ukraine, who worked in a General Motors factory while pursuing painting and photography. It was he who nurtured Burtynsky’s instincts for photography by buying him a camera. The camera connected the teenager’s disparate worlds—the love of Canadian wilderness and the necessity of factory life. This was the root of

¹⁴ Shannon Stevens and Richard Wainwright, “A Review of ‘The Anthropocene Project’: Treachery in Images,” *Art/Research International: A Transdisciplinary Journal* 5, no. 2 (2020): 572.

¹⁵ Burtynsky, interview with author on Skype, February 18, 2020.

Burtynsky's fascination with industrial plants and mines, and the ways they were dependent upon the earth's bounty. His early economic hardship and employment in industry may have created a lifelong reluctance to criticize industry's role in environmental disruption and climate change.

There is no evidence to suggest that Burtynsky was directly affected by Ontario's regional environmental activism in the 1970s, nor the newly aligned environmental groups multiplying throughout Canada in the 1980s, which paralleled those in the United States.¹⁶ In 2010 he stated, "thirty years ago I think I had a sense that there was a political undertone in the work, but it wasn't the motivating factor... the work never was intended to be political, but the political reading as a result of our becoming more aware of the collective human impact on the planet is coalescing..."¹⁷ (Today the artist is included in the Ontario sociopolitical discourse on sustainability.¹⁸) Early on, he made the correlation between natural resources, sustainability, and human consumption—"it's [the camera] reconnecting us to the world that produces the life that we have."¹⁹ His photography has been dedicated to producing awareness around these junctures. He has been combining a documentary approach, unusual framing, and digital editing since the 1980s. His own identity and history form a link to a variety of environments which

¹⁶ These highly visible organizations included the Sierra Club Canada, Greenpeace Canada, and the World Wildlife Fund Canada. For more on the origins of environmental activism in Ontario, see R. O'Connor, "An Ecological Call to Arms: The Air of Death and the Origins of Environmental Activism in Ontario," *Ontario History* 105, no. 1 (2013): 19–46. <https://doi.org/10.7202/1050745ar>

¹⁷ Edward Burtynsky, "The Big Think Interview with Edward Burtynsky," interview by Jessica Liebman, *BigThink*, June 21, 2010. <https://bigthink.com/videos/big-think-interview-with-edward-burtynsky/>.

¹⁸ In July 2021, Burtynsky was a featured speaker and artist at "Shaping Sustainability In Ontario," an event presented by The Office of the Lieutenant Governor of Ontario. On a number of public platforms, he has talked/written about his use of green energy at home, in his car, in the making and screening of his films, his purchase of carbon offsets, and the thousands of trees he has planted.

¹⁹ "Ken Weingart Interviews Edward Burtynsky," *Lens/scratch* (August 27, 2017) <http://lenscratch.com/2017/08/ken-weingart-interviews-edward-burtynsky/>

possess natural beauty, are commodity-rich, and are at the mercy of encroaching development and extraction processes. Most, though not all of Burtynsky's work is concerned with environmental and industrial issues.

Prior to 2000, Burtynsky worked primarily in Canada and the US, documenting forests, railway cuts, homesteads, mines and their tailings, and discarded metal scraps, all of which conveyed the uneasy trespass of industrial "progress" and products onto verdant nature. After 2000, he began photographing abroad—in India, Bangladesh, China, Africa—to bear witness to the largest sites of coal and iron ore extraction, oil bunkering, shipbuilding and shipbreaking, deforestation, factories, landfill and recycling, and dam building. Burtynsky and his colleagues, filmmakers Nicholas de Pencier and Jennifer Baichwal, research possible locations a year in advance using Google Earth, science publications, and data from the Anthropocene Working Group.²⁰ Even with advance planning, there are often unpredictable circumstances of weather, local customs (including the expectation of bribery), availability of helicopters, and even local insurgencies which can alter or cancel a photo shoot.²¹ (fig. 2.5)

²⁰ Burtynsky, interview with author. The Anthropocene Working Group is an interdisciplinary group of geologists, Earth system scientists, historians, and scholars of law tasked with collecting stratigraphic evidence for the Anthropocene as a new geological epoch. It was established in 2009 as part of the Subcommission on Quaternary Stratigraphy, a constituent body of the International Commission on Stratigraphy. In May, 2019, the AWG completed a binding vote determining two major research questions: "Should the Anthropocene be treated as a formal chrono-stratigraphic unit defined by a GSSP?" and "Should the primary guide for the base of the Anthropocene be one of the stratigraphic signals around the mid-twentieth century of the Common Era?" Both questions received a majority positive response. The proposal now awaits formal ratification by the International Union of Geological Sciences.

²¹ Raffi Khatchadourian, "The Long View. Edward Burtynsky's quest to photograph a changing planet," *The New Yorker* (December 19 and 26, 2016). Online version <https://www.newyorker.com/magazine/2016/12/19/edward-burtynskys-epic-landscapes>



Figure 2.5. Burtynsky on a shoot in the Niger Delta, December 2016. Photograph by Benedicte Kurzen/NOOR for The New Yorker

Burtynsky seems drawn to, or accepts the possibility of danger in his quest to capture the world's most ecologically fraught (and often economic and politically fraught) territories. These contested territories include the Niger Delta (oil bunkering); Nairobi, Kenya (elephant and rhinoceros poaching and tusk burning); Guangdong and Henan Provinces, China (dam building, sea walls, and displacement); Chittagong, Bangladesh (hazardous shipbreaking); and Norilsk, Russia (smelting pollution, oil spill). Burtynsky's sincerity and dedication cannot be separated from a certain moral conviction driving him to reveal systems that overtake and undermine Indigenous communities and historical lands, and threaten human and nonhuman life.

Connections and variances with the New Topographics

Burtynsky's photographs have often been discussed in relation to the group of photographers known as the New Topographers. The seminal exhibition *The New Topographics: Photographs of a Man-altered Landscape* (George Eastman Museum, Rochester, New York, 1975) presented a postwar landscape of suburban expansion that included tract housing, industrial parks, highways, and gas stations. In contrast to the expansive, idealized, and remote nature scenery caught on camera by iconic photographers Carleton Watkins and Ansel Adams, these photographers juxtaposed newly built, generic structures with the vast openness of the west to imply the disappearance of open country. They also presented eerily empty and banal urban scenes. Curator William Jenkins described the photographs as "neutral" and "reduced to an essentially topographic state, conveying substantial amounts of visual information but eschewing entirely the aspects of beauty, emotion, and opinion."²² Despite Jenkins's position, critics indicated that some viewers did feel emotional or saw the pictures as being connected to landscape politics.²³ The New Topographers are an important point of reference to Burtynsky, with their style and their links (real or imagined) to the growing ecological movement, their intense focus on encroaching development into vast empty spaces, and their choice to remove actual humans (with few exceptions) in photos of human-driven endeavors. Their work, like Burtynsky's, is open to critical speculation about its political message, whether intentional or otherwise, about the

²² Robert Adams and William Jenkins. *New topographics: Photographs of a man-altered landscape* (Rochester, NY: International Museum of Photography at George Eastman House, 1975), 5.

²³ See Finis Dunaway, "Beyond Wilderness: Robert Adams, New Topographics, and the Aesthetics of Ecological Citizenship," in *Reframing the New Topographics*, ed. by Greg Foster-Rice and John Rorhbach (Chicago: The Center for American Places at Columbia College, 2010, 13-43.

eroding of the landscape and environmentalism. Is their work a critique or endorsement of modernity's blandness and standardization? Are they uneasy or complacent about economic development?

A comparative glance at Joe Deal's *Untitled View (Albuquerque)* (fig. 2.6) with an early work by Burtynsky titled *Homesteads #27, Coleman, Crowsnest Pass, Alberta* (fig. 2.7) reveals two different aesthetic approaches toward the subject of housing development in remote rural areas. This example is a prelude to later works that deal with environmental issues of even greater magnitude.



Figure 2.6. Joe Deal, *Untitled View (Albuquerque)*, 1974, 12.75 x 12.75 in.



Figure 2.7. *Homesteads #27, Coleman, Crowsnest Pass, Alberta, 1985*

Essentially, Burtynsky's *Homesteads* has a sense of vitality and community even though the human presence is negligible. Coleman is a coal mining town, but the evidence of the industry is visually minimized amidst rolling hills in the background. The color and arrangement of the houses and their placement against the majestic mountain gives the scene a picturesque quality. *Untitled View* feels vacuous, lacks expression, and has the generic quality of a real estate or topographic map. The title itself reinforces the idea of anonymity or placelessness, whereas Burtynsky's *Homesteads* gives specific details about the location, inviting the viewer into an identifiable community, a place we could comfortably call home. The rigid geometry of the built structures in Deal's photograph is far from inviting; the buildings look unnatural and ugly in the arid surroundings. The distant aerial perspective and the lack of color and detail render an

overall effect of flatness and sameness. Burtynsky also shoots from the air, but delivers great visual variety—multicolored sloped rooflines, a sliding scale of smooth to rough textures, a satisfying balance of horizontal, curved, and diagonal lines which hold the viewer's interest. Both styles have the potential to engender viewer opinions about human encroachment, though the banal black-and-white aesthetic and smaller scale (13 x 13 inches) in Deal's work is less likely to do so. Rather than suggesting the promise of a budding community, *Untitled View* seems like a dead end. The development may continue but that will mean the loss of biodiversity and competition for water. *Homesteads* invites curiosity about the site and its inhabitants' lives. There is no pictorial evidence that they might live uneasily with the mining operations at their doorstep, nor of their socioeconomic circumstances, nor their environmental health. These absences have become fodder for criticism over the years. Burtynsky's approach would shift over time as he more explicitly foregrounded the sites of damage/ruin and began to eliminate the surrounding communities from the frame.

While the New Topographers focused on a specific aspect of 1970s American culture—suburban and urban development—Burtynsky's intellectual concerns became more global. He recalls, "My early work looked at the pristine landscape in Canada and the United States... but I realized it was not enough. I wanted to probe much deeper, into the nature and visual result of our impact on the planet." He has written that he no longer sees the world in terms of nationhood or borders or language, but as 6.5 billion humans living off a precariously balanced, finite planet.²⁴ With this shift in motivation,

²⁴ John K. Grande, "Manufactured Landscapes: An Interview with Ed Burtynsky," *ETC* 75 (September 2006): 18, 26.

Burtynsky began investigating the projects and systems that support or work against sustainability.

Neutrality, Activism, or Concealed Intentions?

Burtynsky has said that during his early career as a photographer he just wanted to see transformed landscapes, see the beauty in the destruction. When asked in 2020 if his current work was approaching social critique, he replied that his personal position is progressive [his word], but his photos are not meant to be outright proscriptive. He knows we are all implicated in the processes that he documents. He hopes that people who are neutral or undecided about climate change or progressive environmental behaviors will take time with his work and will think about the political and economic systems that encourage land disruption, waste, pollution, and climate change.²⁵ In the book *Anthropocene*, he explains how his mission as a photographer has always been about capturing the visual legacy of anthropogenic transformation:

I have come to think of my preoccupation with the Anthropocene as a conceptual extension of my first and most fundamental interests as a photographer. I seek out large-scale systems that leave lasting marks. At the heart of my challenge has been the pursuit of vantage points that best enable me to picture the relationship of these systems to the land.²⁶

²⁵ Paraphrased from Burtynsky interview with author.

²⁶ Edward Burtynsky et al., *Anthropocene*. First ed. (Göttingen, Germany: Steidl, 2018), 5

When pushed in interviews, Burtynsky indirectly assigns blame to “the capitalist way of life and how we are tricked into needing consumer items vs. people who have no knowledge of such things and may be happier.” And he reveals his personal agenda: “...as an individual living in this world, having actively witnessed the impact of human activity on the landscape for 40+ years, I cannot and will not deny that we are in a climate crisis and inaction is no longer an option.”²⁷ Hence the hidden advocacy in his work. These comments differ from those made in public platforms, where he consistently refuses to blame corporate and commercial entities for the climate crisis and repeatedly says that we are all complicit.

Burtynsky is an aesthete who seeks and transmits mysterious types of beauty while telling truths about harmful anthropogenic practices. Attraction and repulsion occur in swift succession. This lens of contradiction complicates our understanding of Burtynsky’s position as artist-mediator or environmental advocate. He maintains a critical distance, hovering literally and figuratively over ecological disaster. He exercises his prerogative (with corporate permissions) to take the photos, both for his own sense of artistic exploration and to bring awareness to others, then extricates himself from the scene. Like the extracted, processed, and commodified natural resources that he pictures, his photographs become commodities that circulate in the global market.²⁸

Burtynsky’s intentions and *modus operandi*, then, are not completely transparent or consistent. The ambiguity of his stance and his work continues to beg the question, is there a hidden activist agenda or does it reflect a sociopolitical neutrality that has

²⁷ See note 20.

²⁸ Auction prices realized for Burtynsky’s photographs range from \$344 to \$80,000. See Artprice.com, <https://www-artprice-com.eu1.proxy.openathens.net/artist/241690/edward-burtynsky?cl=en>. Accessed July 2021.

undergirded the criticism of some environmental humanities scholars?²⁹ I would argue that the work functions as social, economic, and political critique because, as art historian Andrew Brown among numerous others has stated, “photography as an impartial truth is a myth.”³⁰ At the outset, the framing and selection of sites are significant. These are regions where capitalist and state interventions impact labor, migration, crime, transportation, local subsistence, pollution, and climate. Burtynsky’s work always raises important questions about land ownership and use, economic benefits or losses, consumerism, and ecosystems in crisis. It is unlikely that viewers will come away unaffected.

Picturing the Agents of Environmental Damage—Fossil Fuel Extraction, Deforestation, Mining, Car Culture

Oil

Except in rare cases like the Deepwater Horizon oil spill (2010), Burtynsky does not shoot topical oil-related catastrophes. He focuses instead on the *slow violence* of oil, the hidden (sometimes in plain sight), longer-term damages inflicted on the ecosystem.³¹ Oil possession drives sociopolitical conflict, while the greenhouse gasses

²⁹ See Demos, *Against the Anthropocene*, 19, 61; Gerda Cammaer, “Edward Burtynsky’s Manufactured Landscapes: The Ethics and Aesthetics of Creating Moving Still Images and Stilling Moving Images of Ecological Disasters,” *Environmental Communication: A Journal of Nature and Culture* 3, no. 1 (March 2009): 121–30; Sarah Jaquette Ray, “Environmental Justice, Vital Materiality, and the Toxic Sublime in Edward Burtynsky’s Manufactured Landscapes,” *GeoHumanities* 2, no. 1 (May 13, 2016): 203–219; Sara B. Pritchard, “Dangerous Beauty: Aesthetics, Politics, and Power in Anthropocene: The Human Epoch,” *Environmental History* 25 (April 2020): 377–382; Ila Sheren, “Troubling the Waters of Neutrality: Eco Art as an Identity Proposition,” *Afterimage* 47, no. 2 (June 2020): 31.

³⁰ Andrew Brown, *Art and Ecology Now* (London: Thames and Hudson, 2014), 18.

³¹ Case studies of the causes, networks, and effects of global resource wars including oil and mining are illuminated in Rob Nixon’s book *Slow Violence and the Environmentalism of the Poor* (Cambridge, MA: Harvard University Press, 2011).

derived from oil extraction, refining, and transportation are the primary drivers of climate breakdown. The following photographs from the *Niger Delta* series (figs. 2.8, 2.9) frame oil in a way that alters our assumptions, broadens our world view, and challenges notions of conventional beauty in landscape photography.

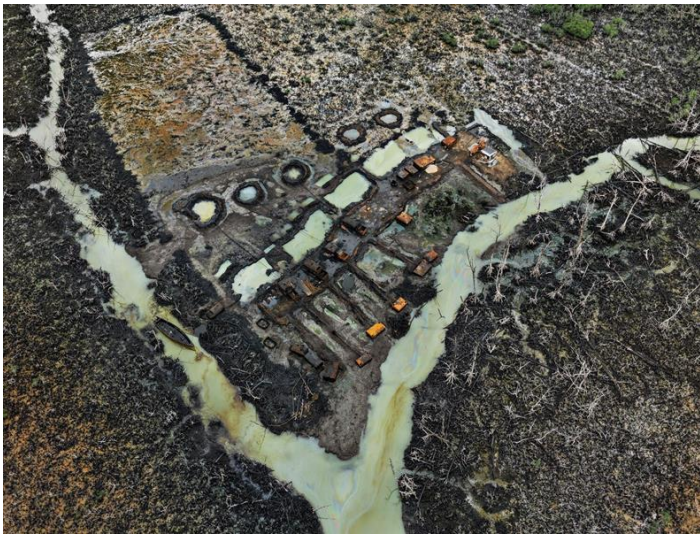


Figure 2.8, 2.9. *Oil Bunkering #7* (top) and *Oil Bunkering #4* (bottom) from the *Niger Delta Series*, 2016

A viewer of *Oil Bunkering #7* and *Oil Bunkering #4* (figs. 2.8, 2.9) may experience an initial moment of intrigue and estrangement, which quickly resolves in the recognition

of farmland and water despoliation. The lack of immediate clarity invites deeper inspection that reveals burnt or smothered land, trees, and vegetation, ramshackle huts, black gelatinous substances, and milky, iridescent bodies of water. There is a small patch of green forest in the top right corner of #7, but the conceptual implication is that devastation will soon encompass the surrounding area. The appearance of some grids and lines indicates that the destruction has been orchestrated, rather than a result of a natural disaster. The scenes appear post-human, with the exception of the speeding boat in #4.

Bunkering, a term unknown to many (explained in wall text and book captions) is the illegal pilfering and distilling of state-owned oil by local villagers and militia. The distilleries refine crude oil diverted from pipelines and dump the waste back into the ground. The Nigerian government has estimated that two hundred and fifty thousand barrels are stolen daily. Hence the speeding boat—carrying looters on the contested property, probably scared away by the sight of Burtynsky’s helicopter crew. As journalist Raffi Khatchadourian explains, “The illicit distilleries are emblems of both criminality and victimhood—belonging to a cycle of damage that grew as it caused more people to commit more ecological harm.”³² In these pictures, no one seems to be benefitting from the bunkering. Burtynsky is not blind to the politics, telling the journalist, “Wherever there is oil, especially in developing countries, by and large there is a lot of pilfering, and society doesn’t really enjoy the profits. In the Niger Delta, the pushback from the have-nots has been to go in there and start pirating the oil.” Burtynsky chooses not to show the trappings of material wealth or agricultural abundance of those who do profit, as he

³² For a brief history of competing oil interests in Nigeria since 1956 see Khatchadourian, “The Long View.” Khatchadourian accompanied Burtynsky to Nigeria for this photo shoot.

does in some other photographs and in his films. This leaves part of the narrative unseen, and is a problem for scholars who advocate for images that assign responsibility for environmental injustice.³³ In #4, the speeding boat is a clue to these tensions and the looting. This detail raises the ethical question, is the looter responsible for theft of oil if his actions are the result of a system based on sociopolitical inequity? Does this excuse him for polluting the land, water, and atmosphere? Without pointing a finger, the photographs raise awareness of state and local oil grabs that harm people and ecosystems, now and in the future.

Some critics see Burtynsky's work as "sanguine" and "aestheticizing" and therefore not probing enough to tell the full story of environmental inequities.³⁴ A deeper, more contextual approach to the problem of oil bunkering can be seen in the photographic series *Oil Rich Niger Delta* by Nigerian photographer George Osodi.³⁵ As a locally born photojournalist, he embeds himself with local people whose daily lives are impacted by the struggle for oil. Unlike Burtynsky, who shoots from the air, Osodi shoots close range at eye level. This gives the viewer a more direct connection to the abject poverty, the presence of military (or paramilitary), the decimation and pollution of the waterways, and smoking gas flares. Spilled oil permeates aquatic life, the banks, the roads, and human bodies. (figs. 2.10, 2.11, 2.12, 2.13)

³³ See note 19.

³⁴ Demos, *Against the Anthropocene*, 19, 61. Demos is referring to Burtynsky's photographs in general, not to this specific series.

³⁵ Osodi's work has toured extensively including venues at Documenta 12 in Kassel, Germany, 2007, the 2015 Venice Architectural Biennale, the Liverpool Biennale, 2018, and the Newark Museum, 2015.



Figure 2.10. George Osodi, *Farmland Oil Pollution*, 2004



Figure 2.11. George Osodi, *Oil Bunkering*, 2006



Figure 2.12. George Osodi, *Militants Tombia*, 2004



Figure 2.13. George Osodi, *Oil Stains*, 2004

Burtynsky's detailed but distanced views of meandering oil and dead vegetation could be taken for abstract paintings if not for the explanatory titles. The minimal presence of human activity separates the toxic conditions from corporeal bodies, and to some extent negates the flux of contamination, now and in the future. Osodi's closeups of local villagers bring a potent sense of the immediate environmental dangers posed to

humans—blackened water, dead trees, and noxious gas flares in *Farmland Oil Pollution*, 2004, and oil slicks on bodies in *Oil Stains*, 2004. Unlike Burtynsky, whose cropped images only allude to oil bunkering through the marks and scars it leaves on the topography, Osodi captures the people, equipment and tankers involved in the hazardous act of pilfering in real time in works such as *Oil Bunkering*, 2006. The political gravity of the situation is emphasized in *Militants Tombia* (2004). The artist foregrounds the serious demeanor of a young, gun-wielding soldier who is backed up by a less professional-looking militant. Burtynsky avoids these fraught human confrontations. He provides a view that can illuminate actual damage to the earth, but one which the viewer can escape from without connecting to the direct human impact of resource extraction, or the tragedies of the locals on the ground.

Another way to expose the deleterious environmental effects of oil is to expose the petrochemical industry, which is framed by Burtynsky as an economic force *and* a toxic presence in a community in *Petrochemical Plants, Baytown, Texas* (2017). (fig. 2.14) The corporation is not named in the title and that may or may not be significant, since it is easy to identify the ExxonMobil Baytown Olefins Plant in the foreground and the ExxonMobil Refinery in the middle ground. They comprise one of the largest industrial sites in the US. From a raking aerial perspective, we see a conglomeration of pipes, cracking furnaces, compressors, storage tanks, blowers, and cooling towers. No humans are visible. The small wedges of green grass and the silvery blue water in the distance convey a once fertile land fed by a healthy bay.



Figure 2.14. Petrochemical Plants, Baytown, Texas, 2017

As vast as this complex is, it is only one of thirty petrochemical plants and refineries in the area east of Houston. (fig. 2.15)

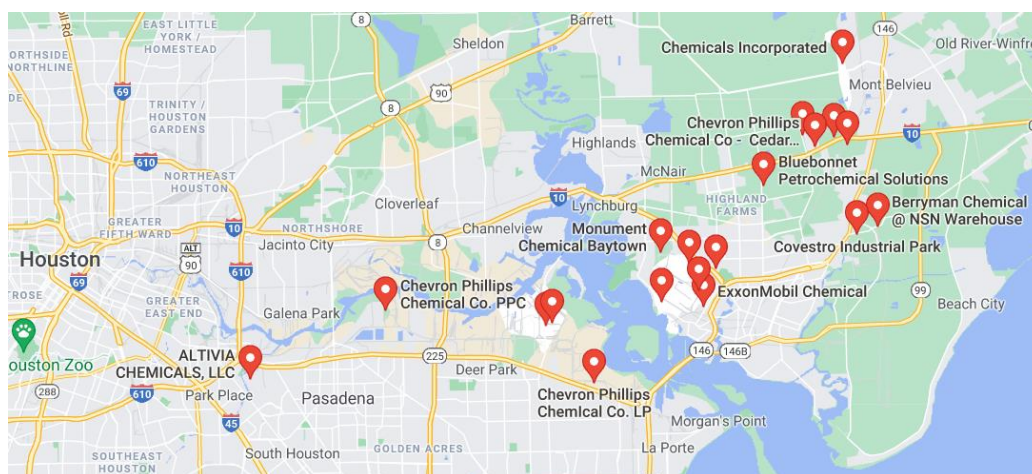


Figure 2.15. Petrochemical plants and refineries in southeast Texas, Google maps

These companies add billions to the US gross domestic product and create hundreds of thousands of jobs in southeast Texas, but are plagued with infrastructure problems and emit huge concentrations of greenhouse gasses. They are under scrutiny from environmental oversight agencies for their record number of explosions and fires, and inattention to air quality. (fig. 2.16)



Figure 2.16. ExxonMobil olefins plant fire in Baytown, July 31, 2019. Photo owned by ABC13

These all-too-frequent events result in employee injury and death, and longer-term damage like toxic airborne chemicals and polluted ground water. Some plants have had repeat violations of clean air laws in the last few years.³⁶

³⁶ Ted Oberg, "13 Investigates: Environmental impact of ExxonMobil fire in Baytown," *ABC 13 Eyewitness News*, August 1, 2019, <https://abc13.com/exxonmobil-plant-fire-chemicals-epa/5433626/>. Gabrielle Banks, "Harris County Ceases Air Monitoring in wake of ExxonMobil Fire at Baytown Petrochemical Plant," *Houston Chronicle*, August 3, 2019, <https://www.houstonchronicle.com/news/houston-texas/houston/article/Harris-County-ceases-air-monitoring-in-wake-of-14278668.php>

A comparison of the photograph *ExxonMobil Baytown Refinery, Texas* (fig. 2.17) from The Center for Land Use Interpretation (CLUI) with Burtynsky's *Petrochemical Plants* (fig. 2.18) will elucidate the differences between an art form meant to alter perception and/or persuade, and a documentary photograph made to inform. CLUI is an education and research organization "dedicated to the increase and diffusion of knowledge about how the nation's lands are apportioned, utilized, and perceived."³⁷ Like Burtynsky, they claim to be unaffiliated with environmental advocacy groups or corporations. *ExxonMobil Baytown* is a work from their Land Use database of exemplary sites of cultural geography, places that have been shaped by the collaboration of people and nature, or conversely, the domination of people's interests over that of nature's.

³⁷ See the CLUI website for its mission, history, programs, and land use database of photographs. <https://www.clui.org/>

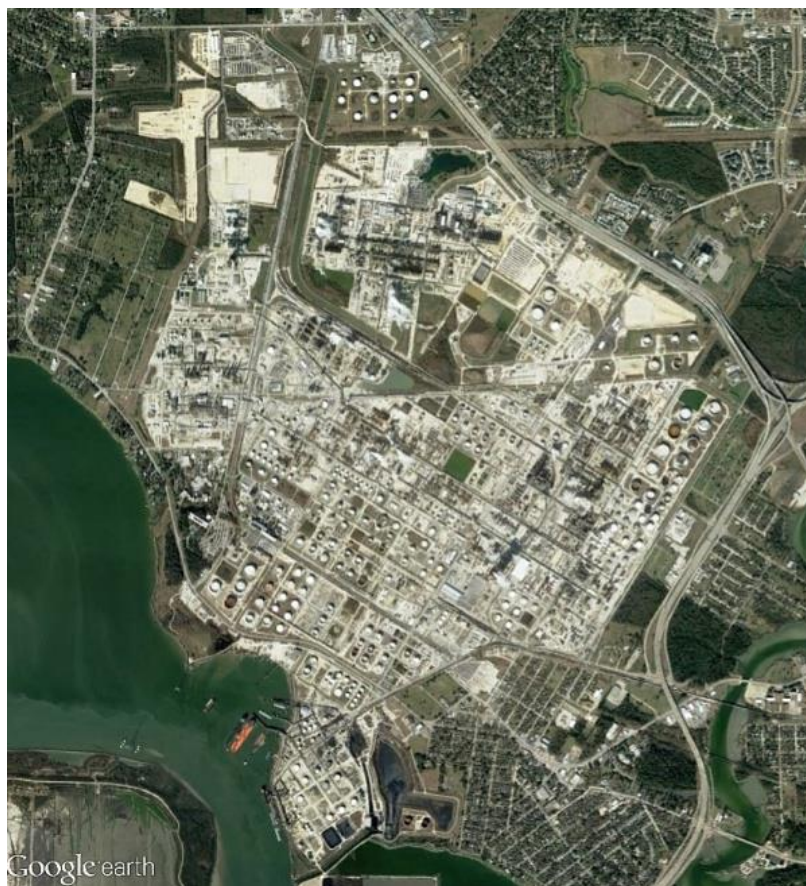


Figure 2.17. *ExxonMobil Baytown Refinery, Texas*, undated, from the CLUI database



Figure 2.18. *Petrochemical Plants, Baytown, Texas*, 2017

Burtynsky's framing focuses on the sprawl of buildings and equipment (more construction is planned for next year).³⁸ Several plumes of white billowing smoke move diagonally towards the horizon, where other plumes are visible. A crispness of atmosphere in the foreground dissolves into the grayish haze of smog in the distance. We can imagine the noxious fumes spreading indiscriminately across the region. There is no sign of humanity, save for a few cars on the access road. The absent workers literally and metaphorically represent victims of industry. The viewer contemplates how this behemoth of industry, which refines oil and produces base stocks for plastic products we use daily, can also be the foe of health and longevity for the planet. When standing in front of this over-scaled image, the viewer is confronted by the enormity and power of the system. They may think themselves small and helpless or find themselves more determined to take a stand. This encounter imparts knowledge and alters perception about the refineries' physical presence and the resultant air pollution in a non-didactic way.

The CLUI image is also an aerial view but taken from a higher altitude. This vantage point blurs details while it captures the grids and geometry of the light-colored, impervious surfaces. The camera is shooting straight down below in the manner of military surveillance photos. This renders a planar quality, more devoid of life than the Burtynsky. The cropping hides the relative scale of the oil plants to the outlying area, and also limits the understanding of the spatial and temporal harm done beyond the

³⁸ "Exxon investing \$2 billion in Baytown, Texas, chemical plant expansion," *Reuters*, May 2, 2019, <https://www.reuters.com/article/us-chemicals-exxon-baytown-expansion/exxon-investing-2-billion-in-baytown-texas-chemical-plant-expansion-idUSKCN1S81CT>

frame. *Petrochemical Plants* has no such sense of containment. The sprawl and the airborne chemicals reach into infinity.

ExxonMobil does not stimulate our senses or make us think deeply about the implications of the plant's existence. We could say it has a mute quality. Alternately, *Petrochemical Plants* demonstrates that affect can be transmitted by sight alone. The viewer feels immersed in the huge image (58.5 x 78 inches) and undergoes a neurological transformation. Research on visual-vestibular interactions provide abundant evidence that what we call "seeing" is not just a visual but a multisensory experience.³⁹ Indeed, this photograph evokes qualities of sound (machinery), smell (fumes), and atmosphere (smog) that are missing in the CLUI photo. These visual clues expand our cognition of oil refineries. Unlike his earlier photo *Homesteads*, which downplayed the presence of mining operations closely connected to a residential community, *Petrochemical Plants* erases all vestiges of a surrounding healthy community. This inversion reflects Burtynsky's enhanced knowledge about the hazards that fossil fuels pose, and his mission to spread that awareness in an affective way.

Deforestation and Agribusiness

Burtynsky's interest in the topic of crude oil led him to investigate other types of oil, their sources of origin and their production. Palm oil, used for biofuel, cosmetics, and in foods, is cultivated in rain forests. Global production of and demand for palm oil is increasing rapidly, with agribusinesses taking over large plantations in Asia, Africa, and

³⁹ Luis Rochas Antunes, "Slow TV: The Experiential and Multisensory Documentary." In *Cognitive Theory and Documentary Film*, edited by Catalin Brylla, and Mette Kramer (US: Palgrave Macmillan, 2018), 213. https://doi.org/10.1007/978-3-319-90332-3_12

Latin America. A vivid example of such is seen in *Clearcut #1, Palm Oil Plantation, Borneo* (fig. 2.19). It is paradigmatic of what art historian Lucy Lippard calls “layered and contradictory sites” that invite dialogue between disciplines like history, cultural geography, economics, politics, art, and sociology.⁴⁰



Figure 2.19. *Clearcut #1, Palm Oil Plantation, Borneo, Malaysia, 2016*

Though Lippard is referring to bodies of land and water in the American West, the agribusiness of palm oil in Borneo is also a story of land-use controversy between corporations, local farmers, conservationists and environmentalists. Borneo, an historically dense rain forest with a sparse population, has in the last thirty years become a mecca for palm oil plantations and migrant workers. The oil is used for biofuel

⁴⁰ Lucy Lippard, *Undermining: A Wild Ride in Words and Images through Land Use Politics in the Changing West* (New York: New Press, 2014), 176.

across many countries. In many parts of the island, plantations are the only source of income and the locals are dependent on the owners for their plots, wages, seedlings, fertilizers, and other supplies. Many are eager to work for the firms; in cases where there is resistance, bribery is used. The inequitable social impacts are matched by unfavorable environmental impacts. Deforestation, accelerated CO₂ release, reduction and or displacement of biodiversity (particularly orangutans), herbicides and pesticides, lower water tables, and increased risk of flooding and fire due to destruction of peat lands are significantly reshaping local farming and subsistence.⁴¹

Clearcut #1 does not provide this socioeconomic context; instead, it highlights the environmental and visual impact of these plantations across a large swath of territory. The framing of the view divides the composition into halves, making the contrast between the lush rainforest and the denuded, repurposed soil more effective as a tool to argue for the preservation of the former. The green rounded organic mass at right is countered by the linear, quasi-geometric segments of brown field at left, creating a tension between human interference and untouched nature. In one glance, the viewer takes in the concept of the hyperobject of deforestation, because there is no end in sight. Though the view is visually stunning on one level, it is also dystopian. Without purposeful and extensive conservation, restoration, and regeneration, the rainforest cannot regulate itself or fight back, and it is doomed to ruin. Deforestation is nothing new, and that's why it is particularly dystopian. Bruno Latour has noted that for centuries, certain types of agents (people) have been insensitive to the extinction of

⁴¹ Rhett A. Butler, "The Impact of Oil Palm in Borneo," *Mongabay* (a nonprofit environmental science and conservation news platform), accessed July 14, 2021, https://rainforests.mongabay.com/borneo/borneo_oil_palm.html

terrestrial species, and that “every time a warning has been sounded about the dangers of some industrial action, ... some colonial appropriation of land (deforestation, plantation), the decision will be made, in a more or less subterranean but always explicit way, to go ahead anyway.” Gaia, which historically was considered a nurturing Mother Earth figure, “is [not] going to pull together and unify what is coming apart before our eyes.”⁴² *Clearcut #1* brings to our attention a new paradigm of Gaia, one which will not heal or regenerate on its own.

Mining as Rupture

Geography scholar Yusoff asserts that “if we are conscious enough of loss and violence [of environments], it can provide the rupture that is crucial to the redistribution of the sensible in how we continue or break with the destructive logic of industrial capitalist modernity.”⁴³ In the following examples, I discuss the notion of rupture in thinking about art and the Anthropocene, via consideration of mining as a hyperobject. Burtynsky meets mining rupture with aesthetic rupture. Challenging Boetzkes’ message to “adjust to contradiction, catastrophe, and ecological volatility,” Burtynsky stimulates viewers to question, admire, be shocked, or feel disoriented.

While the visual evidence of mining’s impact on ecosystems is jarring—land loss and scarring, unnaturally colored wastewater and tailings, disappearing verdant forests, gutted and slivered mountains—these effects remain largely invisible to many people outside of the communities directly impacted. By rendering those effects visible in a way

⁴² Bruno Latour, *Facing Gaia* (Cambridge, UK: Polity, 2017): 142, 191.

⁴³ Kathryn Yusoff, “Biopolitical Economies and the Political Aesthetics of Climate Change,” *Theory, Culture & Society* 27, nos. 2–3 (May 2010): 78, 81.

that engenders prolonged looking, Burtynsky's work can lead to a deeper awareness of the geological and sociopolitical consequences of mining. Yet at the same time, his way of photographing from on high allows these effects to remain distant.

Two of Burtynsky's mining landscapes taken in tandem, *Tyrone Mine #3, Silver City, New Mexico* and *Coal Mine #1, Westphalia, Germany* (figs. 2.20, 2.21) illustrate how formal artistic elements evade didacticism by speaking a language of affect. The views are framed in a way that suggest loss, damage, and danger inherent in mining endeavors.



Figure 2.20. Tyrone Mine #3, Silver City, New Mexico, 2012

The Tyrone Mine is the second largest porphyry copper deposit in New Mexico, and is mined for copper, silver, and gold among other commodity minerals. Like most of the extraction sites Burtynsky photographs, it is layered with history and controversy. Native Americans mined turquoise from the area prior to 1860. It was rediscovered as a

site for ore mining in 1869, and production began ten years later. The site of an upscale, elaborately planned community from 1915-21, it was deserted when copper prices dropped. The town was destroyed in the 1960s with the development of the present day open-pit copper mine. A new processing facility was commissioned in 1984. A reclamation plan for the mine site was submitted in 2004, and included wildlife habitat and new uses for its buildings, but it is unclear how much reclamation has actually taken place. In 2021, the mine's owners received a revised permit to continue and expand operations, to the consternation of neighbors.⁴⁴ They have asked officials to consider adopting rules that would mitigate problematic effects like dust, noise, light pollution, traffic hazards, vibrations, and possible impacts to the water table surrounding a new pit.⁴⁵

Tyrone Mine #3 propels the viewer into an unrecognizable no man's land from which there seems to be no escape. This is accomplished by the bird's-eye view and the compositional cropping of the surrounding area. The winding roads are empty of vehicles and seem treacherous, exacerbating the remoteness and uninviting character of the mine. The stunning photographic realism of the excavated mountain, with its precarious precipices and fractures, brings to mind some of the broader philosophical rifts in the anthropocentric age noted by historian and environmental thinker Dipesh Chakrabarty—the benefits and costs of the Great Acceleration, sovereignty and loss of

⁴⁴ According to David Otori of the New Mexico Mining and Minerals Division, "As of now and into the foreseeable future, the Tyrone Mine has indicated that they plan to operate the mine and even expand it if the economics of copper mining remain favorable." Email to author, October 12, 2021. "Mining and Minerals Division approves updated Closure Closeout Plan for Tyrone Mine," State of New Mexico Energy, Minerals and Natural Resources Department news release, April 29, 2021, <https://www.emnrd.nm.gov/officeofsecretary/wp-content/uploads/sites/2/MMDTyroneMine042921.pdf>

⁴⁵ Geoffrey Plant, "Neighbors air concerns over Tyrone Mine expansion," *Silver City Daily Press*, May 12, 2021, <https://www.scdailypress.com/2021/05/12/neighbors-air-concerns-tyrone-mine-expansion/>

lands, the democracy of consumption, and excavation vs. environmental risk and uncertainty.⁴⁶ While none of the historical specifics mentioned above are conveyed overtly, *Tyrone Mine #3* is the tangible expression of the results of Chakrabarty's rifts—physical risk and danger to miners, precious terrain that is lost forever, colonization of lands, the continued exploration for minerals in the service of consumerism, the abandonment of used-up mines.

The image also evokes a sense of deep time and invites meditation. The shaped mounds remind us of the technically accomplished Egyptian pyramids, Sumerian ziggurats, and Greek amphitheaters, many of which have come to ruin. Melancholy ensues. The intermittent regularity of the mine's cuts is impressive and harmonious, but informed viewers know that the wastewater pools nestling amid the cut slopes can be toxic and dangerous. The absence of human and nonhuman life leads us to contemplate how the mines have disrupted the interdependencies of organic and inorganic life that once flourished here. These thoughts produce different emotions—anger, melancholy, fear, helplessness. For some industrialists, the depiction of an endeavor of this magnitude might be a heroic tribute that instills pride. One particular group of mine owners, looking at photos of abandoned mines, found them a sorry reminder that they had reached the end of the line of quarrying at that site.⁴⁷ No matter who the viewer is, all would most likely acknowledge that a physical rupture of the earth has occurred, and this leads to different emotional outcomes.

⁴⁶ Dipesh Chakrabarty, "Keynote: The Anthropocene Project. An Opening," Haus der Kulturen der Welt, Berlin, January 13, 2013, <https://www.youtube.com/watch?v=svggLPFpaOg>, and *The Climate of History in a Planetary Age* (Chicago: University of Chicago Press, 2021).

⁴⁷ Geoff Manaugh and Nicola Twilley, "The Art of Industry: The Making and Meaning of Edward Burtynsky's New Exhibit, 'Oil,'" *The Atlantic*, June 19, 2012, <https://www.theatlantic.com/technology/archive/2012/06/the-art-of-industry-the-making-and-meaning-of-edward-burtynskys-new-exhibit-oil/258654/>



Figure 2.21. *Coal Mine #1, North Rhine, Westphalia, Germany, 2015*

Coal Mine #1, taken from a more oblique angle, shows a large slice of Europe's deepest open pit mine (as determined relative to sea level). Known as the Hambach mine, it sits on the site of the ancient Hambach forest, most of which has now been cleared and is the subject of ongoing contestation.⁴⁸ The deforestation is hinted at by a sliver of green at the right horizon line. Most of the picture plane is filled with valleys and peaks of freshly dug earth. This operation has been accomplished by the giant bucket-wheel excavator perched on the left edge of a plateau. More excavators, partially obscured by the atmospheric perspective, do their work in the distance. The implication

⁴⁸ "Court temporarily stops clearing in the Hambach Forest," *Spiegel Wirtschaft*, May 5, 2018, <https://www.spiegel.de/wirtschaft/soziales/hambacher-forst-gericht-verfuegt-einstweiligen-rodungs-stopp-a-1231705.html>

is that this work will continue indefinitely as far as the eye can see. The hyperobject of mining is captured in real time through Burtynsky's lens.

Burtynsky is certainly not the only contemporary photographer to find mines a source of artistic inspiration. Peter Goin, Patrick Nagatani, Michael Light, Terry Evans, and David Maisel share a similar aesthetic in that they capture and create drama from the emptiness, devastation, remoteness, and scale of mining operations. Their work also has the power to convey hyperobjects. Others, like John Ganis and Emmet Gowin, do not achieve the same rhetorical pitch in scenes of similar subjects. A brief look at Emmet Gowin's *Mining Exploration Near Carson City, Nevada* (fig. 2.22) shows how an aerial view of a mine can inspire curiosity but fail to produce multivalent readings and affect.



Figure 2.22. Emmet Gowin, *Mining Exploration Near Carson City, Nevada*, 1987-1996, 9 ½ x 9 ½ inches

Mining Exploration is an enigmatic, abstract image. We do not recognize the shapes and lines as human-made markings on the earth. This is due to a number of technical factors—altitude and angle of the shoot, limited tonal range, lower contrasts,

cropping out of surrounding area, minimal depth of field, and the small scale of the image. The viewer is not given visual clues to toxic air or water, underground disruptions, VOCs (volatile organic compounds), or surface vibrations. One does not feel the loss, violence or rupture inherent in mining operations.

The Burtynsky images are hyperfocal (distant elements are sharp), have much higher resolution and color saturation, and are super-scaled. Though devoid of humans, they capture a sense of earth's transformation by humans. The deep hollows and linear markings (*crosscuts* and *raises*) expose various mineral veins and create abstract patterns, while denoting excavation and permanent defacement. Visually this embodies both the fascination and horror of strip mining. It is much more difficult to sense process and transition in *Mining Exploration*, and therefore more difficult to conceptualize the terror of the hyperobject.

Car Culture as Culprit

The New Topographers depicted the booming residential development in the West that was enabled by cars and highways. The infrastructure needed to support these communities—fossil fuel energy, gasoline, steel and concrete, deforestation, and water diversion, is now of course recognized as contributing to climate change. Burtynsky has been grappling with the paradox of the lure of Southern California climate and topography and the resulting dense urban sprawl, car culture, and smog. He has been fixing his lens on Los Angeles highways for two decades (figs. 2.23, 2.24)



Figure 2.23. *Highway #2, Intersection 105 & 110, Los Angeles, California, USA, 2003*

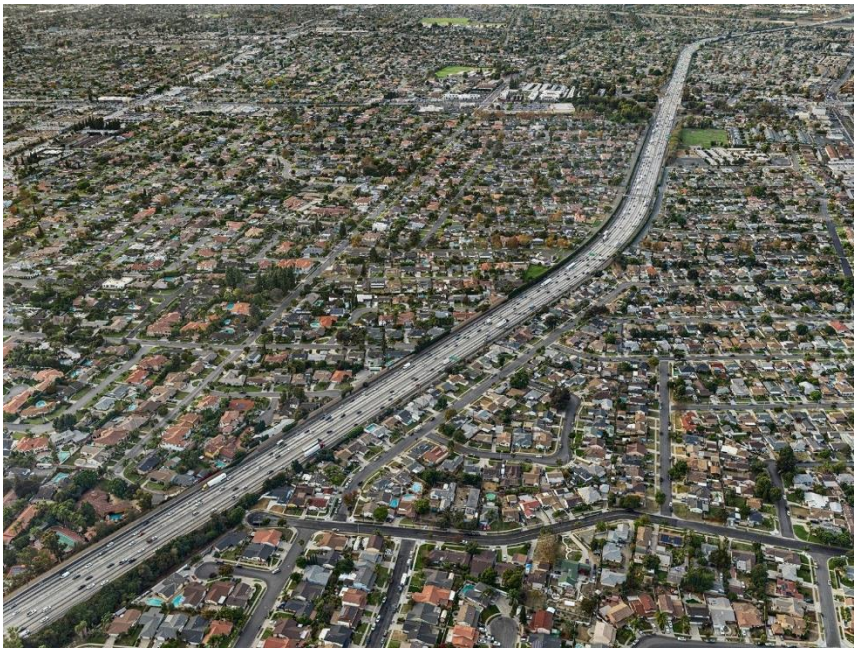


Figure 2.24. *Highway #8, Santa Ana Freeway, Los Angeles, California, USA, 2017*

An analysis of *Highway #2, Intersection 105 & 110, Los Angeles, California* (2003) and *Highway #8, Santa Ana Freeway, Los Angeles, California* (2017) will counter

the charge that “the way [Burtynsky’s] work is presented as high art...almost exclusively emphasizing its aesthetic qualities, deprives it of any other reading, be it an ecological, social or cultural one.”⁴⁹ These two photos represent the changing symbolism of the highway from an aesthetic and engineering marvel to an object that displaces, distorts, and redefines human relationships to the land. The first photo (not part of the *Anthropocene* exhibit) (fig. 2.23) highlights the calligraphic, nearly symmetrical quality of the intersecting ribbons of road. The layering of silvery dynamic lines conveys motion in a multiplicity of directions and the promise of unlimited travel. Because the highway and smaller roads dominate the image, the small patches of greenery and neighborhoods take a “back seat” pictorially. This visually intriguing concrete maze is a metaphor for car colonization of Los Angeles.

The later image (fig. 2.24) aptly suggests other realities about freeways, summed up by American essayist D.J. Waldie: “The freeways of Los Angeles turned out to be tools of state land use regulation, justification for the clearance of unwanted communities, and barriers between communities, as well as gifts of political patronage, and good business for the corporations that designed and built with concrete.”⁵⁰ Highways elicit multiple conflicting associations—freedom of mobility, gridlocked prisons, streamlined clean conveyors, and expeditors of emission-based global warming. Here, Burtynsky frames the freeway as a metaphorical vector. The diagonal thrust transports thousands of cars and our gaze into an unseeable distance. It’s an

⁴⁹ Cammaer, “Edward Burtynsky’s Manufactured Landscapes,” 129.

⁵⁰ D.J. Waldie, “Concrete Dreams: Desire and Regret on the Freeways of LA,” *KCET*, Sept.23, 2015, <https://www.kcet.org/shows/lost-la/concrete-dreams-desire-and-regret-on-the-freeways-of-la>. Waldie’s article is based on Kevin Starr, *Golden Dreams: California in an Age of Abundance, 1950-1963* (Oxford University Press, 2011).

agent that carries other unhealthy agents (emission-producing vehicles) across time and space, making it a hyperobject. Unlike *Highway #2*, which hovers above various topographies, *Highway #8* seems to splinter a vast community in half, communicating social and ecological rupture. Its industrial aspects—the light gray color, smooth surface and sharp linearity act as foils for the organic forms—scattered trees, miniscule plots of green grass, and terra cotta roofs. The earlier photograph privileges streamlined structure, movement, and liminal space, while the latter draws attention to the sprawl of densely packed neighborhoods. The highway reads as both a divisive tool and a means to escape claustrophobia. From the high aerial perspective, each individual plot seems subordinate to the whole, forming parts of a jigsaw puzzle. Is Burtynsky asking us to imagine what communities were like before cars dominated the landscape and when CO2 existed in tolerable levels?

The Sublime, Ambiguity, and Abstraction

At this juncture, I will look more deeply at three strategies in Burtynsky's photographs that encourage extended viewing, namely an aesthetic of the sublime, ambiguity, and abstraction. Sometimes all three are at work in one photograph; at other times they independently define a picture. The first two strategies intertwine with specific sites and subjects in order to bring a slightly delayed, but intense awareness of ecological issues. Burtynsky's abstract images privilege beauty and bewilderment over messaging, as a way to lure viewers in and keep the images indefinitely in their minds. Without these qualities, the artist's work might fall solely into the realm of photojournalism. But Burtynsky considers himself an artist, and his work is framed as

such in museums and galleries. His work rises artistically above reportage by raising the following questions: Are his aesthetics a form of dissent, a subjective appreciation of the visual field before him, or eye-catching documents which substantiate the forces that lead to climate change? Can systems and practices which alter land and threaten human and nonhuman beings still have an aesthetic beauty?

Sublime and Subliminal?

There has always been critical consensus that certain sublime qualities, as articulated by Sir Edmund Burke, abound in Burtynsky's images.⁵¹ Burke was writing about interfaces with wilderness that aroused sensations of pain, danger, or terror. Certain rare examples of Burtynsky's landscape imagery, like *Xiaolangdi Dam #3*, can elicit such emotions, though the unleashed forces of water are caused by human engineering rather than by nature (fig. 2.25).

⁵¹ Some of the earliest references to the sublime in Burtynsky's work include Catherine Dean, "Sublime Traces," *Maclean's* 116, no. 5 (February 3, 2003): 42, and Marnin Young, "Manufactured Landscapes," *Afterimage* 30, no. 6 (May 2003): 8.



Figure 2.25. *Xiaolangdi Dam #3, Yellow River, Henan Province, China, 2011*

Not all of Burtynsky's oeuvre is concerned with environmental issues. Some landscapes represent geological time scales and are meant to inspire a "sublime of astonishment" as in *Basque Coast #1* (fig. 2.26). Astonishment comes when we are unfamiliar with spectacular sites and they overwhelm our sense of centeredness. Whether terror or astonishment, these strong emotions overpower reason; they initially fill the viewing experience to the exclusion of other thoughts.



Figure 2.26. *Basque Coast #1, UNESCO Geopark, Zumaia, Spain, 2015*

Many of Burtynsky's landscapes fulfill Burke's notion of the sublime, but the intention of *The Anthropocene Project* isn't to render us awestruck in the face of wilderness. His use of the aesthetic sublime is not aimed at promoting tourism, or invoking spiritualism, a dreamy state, or an idea of a mythic world. It is used to frame the concrete and uncomfortable issues of environmental ruin, over-development, factory expansion, capitalist and imperialist ambition. These are not pleasurable images for mass consumption that will become clichéd. They are examples of the toxic sublime—the tension between dangerous labor, intimidating machines, destruction, contamination, and the visual impact of the image. Images of visceral beauty engendering cognitive dissonance produce conflicting perceptions and emotions that encourage the viewer to critically self-engage about their level of environmental

awareness. The goal of toxic-sublime art is to trouble viewers to the extent that they re-orient themselves to present dangers and inspire them to take action. The term is not exclusive to Burtynsky's work, but his name has become synonymous with it.⁵²

Burtynsky employs another ingredient in Burke's recipe for the sublime to link landscape to environmental politics—framing a scene to appear vast and infinite. For Burke, "Greatness of dimension...either in length, height, or depth...and Infinity [which] has a tendency to fill the mind with that sort of delightful horror," are the truest tests of the sublime.⁵³ Vastness and infinity correlate with the more contemporary notion of the terrible sublime—the hyperobject, as defined by Morton. *Clearcut #1 and Highway #8*, already discussed, (figs. 2.19, 2.24) have these qualities, as does *Carrara Marble Quarries*. (fig. 2.27) Here, Burtynsky combines sublime mountain imagery, details of extraction machinery and processes, and views of carved-out marble in situ to elicit wonder and awe, but also convey widespread rupture and desecration.

⁵² Other prominent artist photographers associated with the toxic sublime are Daniel Beltrá, J. Henry Fair, David Maisel, Alejandro Duran and Florian Maier-Aichen.

⁵³ Burke, Edmund, and Adam Phillips. *A Philosophical Enquiry into the Origin of Our Ideas of the Sublime and Beautiful*. Oxford World's Classics (Oxford, England: Oxford University Press, 1990), 66–67, <https://archive.org/details/philosophicalenq0000burk/page/66/mode/2up>



Figure 2.27. Carrara Marble Quarries, Carbonera Quarry #1, Carrara, Italy, 2016

Carrara Marble Quarries follows a tradition of sublime mountain imagery, going back to the paintings of Albert Bierstadt (e.g., *Majesty of the Mountains*, 1853) and Thomas Moran (e.g., *The Teton Range*, 1897), and the photographs of Ansel Adams (e.g., *Denali and Wonder Lake*, 1948). However, Burtynsky's intention is altogether different. Rather than using landscape as a tool to encourage settlement, or tourism, or conservation, Burtynsky is calling attention to a centuries-old industry that pits local labor and art heritage against the ruin of the Tuscan countryside and larger environmental concerns. In 2014, quarry work was temporarily halted due to a dispute over new land use regulations, which are still evolving. The regional environmental

agency has imposed fines for waste mismanagement.⁵⁴ A recent documentary, *The Marble Quarries of Carrara*, reports that marble dust hangs in the air, leaks into groundwater and turns rivers milky-white. Flooding has increased due to rapid extraction which upsets the hydrogeological balance.⁵⁵ The accelerated rate of marble excavation is fueled by desire and consumption in the developing world and new technologies meant to match that demand.

When the artist shows us large sections of excavated marble high up in the Apennine Mountain range, we first fall captive to the aesthetic sublime, then become curious about the site, its history, and the political controversy. Because the site is unfamiliar to most viewers, they are first astonished by the visual incongruities. We usually associate white-capped mountains with snow and unfathomable heights, not marble quarries where people actually work. The viewer may be shocked that such labor can take place at such high altitude. The difficulty of accessing the quarry and the potential danger involved in such endeavors might cause the viewer concern for the laborer whose existence depends on this job. A native environmentalist, familiar with the local biome, might be angered at the ongoing destruction of an ancient ecosystem that is the refuge of big European predators such as the Italian wolf and the marsican brown bear, now extinct in the rest of Central Europe. Burtynsky's angle emphasizes the disappearance of an entire mountain peak, a focus which seems to outweigh the importance of the industry to Tuscan heritage.

⁵⁴ John Hooper, "Marble quarries shut over environment plan firms claim will cost 10,000 jobs," *The Guardian*, June 30, 2014.
<https://www.theguardian.com/world/2014/jun/30/tuscany-marble-quarries-shut-environment-dispute>

⁵⁵ "The Marble Quarries of Carrara," Deutsche Welle (German media organization) July 17, 2021.
<https://www.dw.com/en/the-marble-quarries-of-carrara/av-58295156>

The vastness of the range, and a composition which implies that the work will continue indefinitely, makes the Carrara quarry a local manifestation of a global industry, or hyperobject which disrupts earth's processes and biodiversity. Burtynsky conveys the magnitude of the situation through a wide-angle lens, aerial view, gigapixel details, and the huge scale of the print. The abundance of visual information sways perception and cognition. The large visual field and the pixel density coerce a sense of immersion, the subjective impression of being deeply involved in a specific situation. Immersion can be sensory or cognitive.⁵⁶ As psychologist Teresa Brennan notes, "Visual images, like auditory traces, also have a direct physical impact; their reception involves the activation of neurological networks, stimulated by spectrum vibrations at various frequencies. These also constitute transmissions breaching the bounds between individual and environment."⁵⁷ Psychological studies have shown that taken together, a sense of awe, immersion, and large scale contribute to a transformational emotion that triggers climate concern and engagement.⁵⁸ In this particular work, Burtynsky sensitizes the viewer to the unfolding destruction of a mountain habitat. When shown alongside other scenes of topographic destruction, object labels, and text panels, the viewer comes to understand that all these catastrophic events are undermining the health and future of the earth as we know it. While the artist does not show the end product of the quarrying—marble as a global commodity, used in everything from

⁵⁶ Arnaud Prouzeau, Anastasia Bezerianos, Olivier Chapuis. Visual Immersion in the Context of Wall Displays. Interactive Surfaces and Spaces Companion Proceedings, November 2016, Niagara Falls, Canada, <https://hal.archives-ouvertes.fr/hal-01383587/file/imm-qi-cr.pdf>

⁵⁷ Teresa Brennan quoted in Suzaan Boettger, "Ways of Seeing, Rhetorical Strategies of Environmentalist Imaging," in *The Routledge Companion*, 2021, 258.

⁵⁸ Liselotte J. Roosen and Christian Klöckner, "Art and Documentaries in Climate Communication: Experiencing the Reality of Climate Change and Leading the Way to Change," *Art Research International* 5, no. 2 (2020): 535.

countertops to statues, he facilitates reflection on quarrying and how that imbricates with earth's transformation and consumer culture.

Aesthetic Ambiguity

Burtynsky finds artistic possibilities in the scars, marks, patterns, immense structures, unrecognizable shapes, and unnatural colors that exist as a result of human meddling in the earth's natural processes. In some photographs, like *Phosphor Tailings Pond #4* and *Uralkali Potash Mines* (figs. 2.28, 2.29) he chooses not to contextualize the site within a larger periphery of recognizable places.



Figure 2.28. *Phosphor Tailings Pond #4*, Near Lakeland, Florida, USA, 2012



Figure 2.29. *Uralkali Potash Mine #4, Berezniki, Russia, 2017*

This leaves the work open to misreading, or multiple readings. Viewers may be confused and intrigued simultaneously. In *Phosphor Tailings Pond #4*, are we looking at sand and ocean? Is the machine operator creating dunes of some sort? Why is the water green? The object label names the substance phosphor, but the viewer may not know what effect this terrestrial substance has on the body, the environment, how long it has been there, and how far and deep it goes. The *Anthropocene* book caption explains that phosphate ore is a critical mineral resource for agriculture, necessary for fertilizer and plant growth. It is non-renewable. It is accessed by clearing thousands of acres of natural vegetation and topsoil. Runoff is harmful to fish species and vital water sources, and creates harmful algal blooms (seen in the photograph). For those unfamiliar with this toxicity, the colors, textures, and contrasts of water and sand might appear pleasing; for the informed, they do not. This dangerous beauty, as it resides in a

still photograph format, does not have the political overtones that one will find in a documentary. (Burtynsky's film *Anthropocene: The Human Epoch*, discussed later, moves into that territory.) Like the ambiguous beauty in the photograph, the role of phosphates in our ecosystem is fraught with contradiction.⁵⁹

Urakali Potash Mines presents similarly beautiful, unfamiliar terrain. The cylindrical orange and gray forms resemble snails on steroids, or something from science fiction. Only through didactic labels do we learn that they are potash, another mineral used for fertilizer. These mineral salts are located in the remains of an ancient sea floor, 350 meters below Berezniki, Russia. They are reached by tunnelling machines which leave impressions in the soft rock as they pass through. This unknown, machine-created beauty is part of a system of disaster. In the last decade, ten thousand kilometers of tunnels under Berezniki have caused giant sinkholes that swallowed roads and buildings.⁶⁰

The aestheticizing of both of these subjects lessens their impact as communication of environmental crisis. They would be more effective in that aim if shown with other site-specific contextualizing photos. For example, *Phosphor Tailings Pond #4* could be grouped within scenes of Florida's adjacent virgin vegetation and topsoil, and views of dead fish lying within those green algal pools. The larger

⁵⁹ Mike Thomas, "STRIPPING THE STATE OF ITS PHOSPHATE ONE OF THE WORLD'S MOST PRECIOUS ELEMENTS – WITH WHICH WE GROW FOOD, CLEAN CLOTHES, MAKE CHINA AND BUILD BONES – IS FOUND IN HUGE AMOUNTS IN FLORIDA. BUT IS FLORIDA PAYING TOO HIGH A PRICE FOR IT?" *Orlando Sentinel*, December 19, 1988, <https://www.orlandosentinel.com/news/os-xpm-1988-12-18-0090140159-story.html>. Laura Newberry, "Battle over phosphate mining roils small Florida town," PBS News Hour, Oct.31, 2018. <https://www.pbs.org/newshour/show/battle-over-phosphate-mining-roils-small-fla-town>

⁶⁰ Andrew E. Kramer, "Russian City on Watch Against Being Sucked into the Earth," *New York Times*, April 10, 2012.

environmental impact of the *Uralkali Potash Mines* could be communicated by photos of the tunneling machines at work and the sinkholes which ensued years later.

A different sort of aesthetic ambiguity is present in *Dandora Landfill #3* (fig. 2.30)



Figure 2.30. *Dandora Landfill #3, Plastics Recycling, Nairobi, Kenya, 2016*

The presence of a few local workers makes for a disconnect between the action taking place and the aesthetically pleasing composition. The photograph is both a direct quotation from life and an allegory for insurmountable global waste. The Dandora landfill is among the largest in the world, receiving 2,000 tons a day of industrial, agricultural, commercial and medical waste. The effluent from the landfill runs off into the Nairobi River. Of the one million people who live nearby, many sort plastic scrap to earn money.

Like many other countries, Kenya is reaching its capacity to recycle or absorb waste.⁶¹ The dumping of primarily northern waste in Africa, and its sanctioning by organizations such as the World Bank, constitute a form of “waste colonialism.”⁶² Burtynsky hints at this situation by framing a few African individuals in tattered clothes picking through the mountain of trash.

While viewing this multivalent work, our experience is shaped by theorized responses to art and ambiguity in the brain. Zeki asserts that when there are high levels of ambiguity in certain works of art, the viewer must engage longer to make sense of it (which is the function of the brain). Different micro-consciousnesses work at different speeds and in different parts of the brain.⁶³ For example, we see color before we see motion. The viewer is initially attracted to the bright primary colors sprinkled throughout larger, multicolored triangular sections. Next comes the recognition of people and dogs mingling with trash, which leads to some sense of context. These people are sorting scrap by hand; there is an old motorbike close by fitted with baskets and a jug. This shot captures a day’s work, but the cropped frame hints that the trash beyond it is insurmountable. This may engender pathos for the workers. Ultimately, it is the title that clarifies the location and action (along with the extended explanation found in the book caption). This specificity forces non-African viewers to ponder the disposal of their plastic waste and how that imbricates with human labor.

⁶¹ Burtynsky, *Anthropocene*, 32.

⁶² Sintia Issa, “Waste You Can’t Deny,” in Demos, *The Routledge Companion*, 109-110.

⁶³ Semir Zeki, *Inner vision: an exploration of art and the brain* (Oxford: Oxford University Press, 2003); Zeki, “Art and the Brain,” *Daedalus* 127, no.2; The Brain (Spring, 1998): 71-103; Zeki, “The Neurology of Ambiguity,” *Consciousness and Cognition* 13 (2004): 173-196.

Another landscape that foregrounds plastic waste artfully embedded in a colorful, textural composition is *Derrame*, part of Alejandro Durán's *Washed Up* series. (fig. 2.31) Unlike *Dandora*, the photograph is devoid of local workers and context.

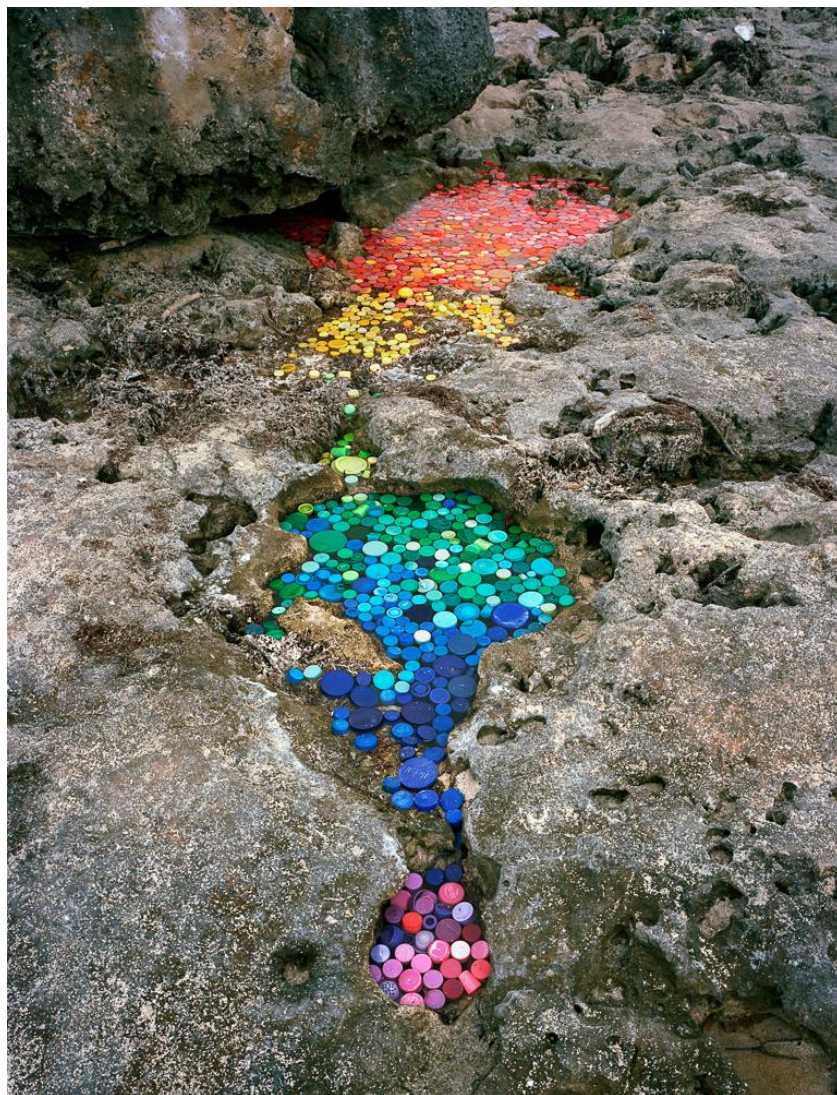


Figure 2.31. Alejandro Durán, *Derrame (Spill)*, from the *Washed Up* Project, Sian Ka'an, Mexico, 2010

Derrame (Spill) presents plastic objects that have been collected, sorted by color, and harmoniously arranged by the artist within seaside rock crevices. If not for the title, the origin and implications of these colorful items might not be known. Unlike *Dandora*

Landfill #3, there is no visible tension between the aesthetics of the image and the type/necessity of labor being performed, although it does relay a message about our inability to contain our refuse. After these photos are taken, the trash is recycled into new artworks and used in environmental art workshops to further awareness about plastic pollution.⁶⁴ The specific functions/contexts of *Dandora* and *Derrame* are clearly different, though both draw attention to the unending transmission and flow of global waste. Burtynsky's two-dimensional work, shown in museums and galleries, alludes to the negative social and environmental impact of plastic refuse while framing the workers as compositional pieces in a complex composition. Durán's work is a community-based, hands-on project comprised of collecting, arranging, photographing, and recycling.

Zeki's definition of neurological ambiguity avers that there is actually "certainty, the certainty of different scenarios each one of which has equal validity with the others."⁶⁵ This theory corresponds with the process by which the viewer unravels Burtynsky's complicated images, which are cloaked in superficial beauty. *Phosphor Tailings Pond #4* and *Uralkali Potash Mine #4* have validity as stunning, mysterious semi-abstract works of art, *and* as artifacts of disappearing nature, *and* as fragments of hyperobjects of destruction. *Dandora Landfill #3* is a pleasing yet confounding scene, an artist's statement about inequity, consumer accumulation, and the limits of containment.

Zeki's theory correlates with Burtynsky's comments about the circular way that viewers see his work. According to the artist, "When you first look at it the colors and forms seem surreal, so it must be a fiction. Then you find out that they are real, this is

⁶⁴ See the artist's website. <https://alejandroduran.com/photoseries>

⁶⁵ Zeki, "The Neurology of Ambiguity," 189.

not fiction, and there is an element of shock. That takes you back into a surreal state of comprehension. The layers of seeing and meaning go back and forth.”⁶⁶

Strategies and Encounters in the Museum Exhibition

The drama and rhetorical power in each of Burtynsky's photographs are enhanced by museum display techniques and the addition of high-resolution, 20 by 10-foot photographic murals embedded with short videos by Baichwal and de Pencier, as well as augmented-reality installations. (fig. 2.32)



Figure 2.32. Anthropocene, Installation view, Malmö Museum, Sweden, 2020

⁶⁶ Burtynsky, interview with author.

Depicting and viewing destructive hyperobjects at work on the biosphere can hardly be considered a neutral experience. When confronted with huge-scale photographs and murals, many of them panoramic, we enter into a world of the double sublime (drama in both subject and scale). Likewise, seriality is a strategy of reinforcing the notion of hyperobjects. In the Art Gallery of Ontario, photographs are mounted in front of thin, scrim-like wall panels. (fig. 2.33)



Figure 2.33. *Anthropocene*, Installation view, Art Gallery of Ontario, 2018

The spaces in between each photograph allow viewers to see the rows behind; the panels line up like a parade of disaster banners. An audio recording of a roaring fire, taken during an elephant tusk burning in Kenya, heightens the sense of danger. Each photo depicts a single locale, but also signifies vast systems of land exploitation and built environments across the world. While the viewer engages with one site at a time

(possibly in their home country), they will likely question their own community's complicities in land abuse. Seriality defies the quick and the fragmentary—memes, icons, sound bites—in that it slowly builds up a picture of the whole. It is a way to reconcile the scale of aggression and destruction with the visitor's immediate experience. Art historian Marnin Young has noted that the temporal interplay of images yields economic and political connections that we might not otherwise see. At the same time, the contrast between the aesthetic and intellectual readings makes the works ambiguous:

The critical power of each image builds and expands on those that precede it. The politics of any given image thus resides in its temporal expansion into the wider field of interpretation. And like these great modernists, Burtynsky's photography simultaneously slows the world down to a point of imagined ideological transparency and opens itself up to ambiguities and antinomies of knowledge, reflection, and history.⁶⁷

The greater part of the exhibition is comprised of two-dimensional photography. The addition of augmented-reality experiences (AR) inspires a different kind of engagement.⁶⁸ When the viewer looks at a photograph on the gallery wall, the point of view is already established by the artist, although the viewer may move closer or farther away. With a hand-held AR device, the viewer can focus in on details, zoom out, or

⁶⁷ Marnin Young, "Manufactured Landscapes: The Photographs of Edward Burtynsky," *Afterimage* 30, no. 6 (May 2003): 9

⁶⁸ Virtual reality is not present in the exhibitions but is accessed online, through the VR app or in the Anthropocene Project Education Program.

rotate an image at her discretion. Avara Media, the company that partnered with Burtynsky, explains the technical process:

Photogrammetry was utilized to create the individual AR experiences; thousands of high-resolution photographs shot by Burtynsky, combined with complex and proprietary software, generated each 3D model that was further refined, optimized, and transformed into AR objects. Each AR image can be viewed from 360 degrees with a visual fidelity that allows visitors to see the most granular of details.⁶⁹

AR pushes photography into the experiential; it has an ephemeral and tactile quality that leads to a visceral understanding. AR allows for a more intimate, seemingly real encounter with a site or endangered animal. For example, there is an AR experience with Sudan, the world's last male northern white rhino (who died in 2018). (fig. 2.34)

⁶⁹ From the AVARA website <https://www.avaramedia.com/about>, "Our vision is **"Building Better Worlds"**. We are leveraging the magic of Augmented Reality to experientially connect a global audience to the biggest environmental and ecological issues our planet is facing."



Figure 2.34. *Anthropocene*, installation view, unidentified location in Canada, 2018

AR creates a 3D life-size model of Sudan and brings him closer to the viewer in an almost tactile sense, enabling an emotional connection with a species on the brink of extinction. Other AR installations bring remote environmental threats inside the museum, where we can contemplate them in a safe space. One study of visitor reactions at the Art Gallery of Ontario indicated that visitors responded generally positively to the diversity of media in the exhibition; 81% of visitors reported using the augmented reality app AVARA in the exhibition, and 25% described the AR as a key part of their overall visitor experience.⁷⁰ These virtual enhancers add to the dilemma of presenting far-flung environmental problems in a safe, affluent institution or

⁷⁰ Shiralee Hudson Hill, "A Terrible Beauty: Art and Learning in the Anthropocene," *Journal of Museum Education* 45, no. 1 (March 2020): 80. doi:10.1080/10598650.2020.1723357. Hill explained that 81% of visitors using the app was an extremely high number in terms of AGO exhibition engagement (a quantitative measure). She considered the 25% (a qualitative measure) a significant percentage, though it indicated that the app was less effective than the photomurals in arousing extended viewing. Other factors such as age might be taken into consideration.

neighborhood. Except for those who have first-hand experience, viewers may still feel removed from some of the problems and events. This can result in denial or helplessness.

Other types of dramatic display are employed in the Malmo Museum “staging.” (figs. 2.35, 2.36)



Figures 2.35 and 2.36. *Anthropocene* installation, Malmo Museum, Sweden, 2020

A cinema-like dark space is divided by spotlighted photographs that appear to be free-floating (they are hung by invisible wire). Large didactic labels are placed at floor level

so as not to distract from the images. This temporarily separates pictorial content from context. Film clips on side walls and viewer-activated AR animate the content, pushing against the stoicism of the photographs. Faced with the display of a great diversity of land issues in numerous locations, an understanding crystallizes of the scope of the crisis. Or as video artist and theorist Ursula Biemann notes, “The profound ecological changes currently underway have made it crucial to think with geological time scales and to link seemingly disparate events across the globe.”⁷¹

Installations such as this one aim to leave the museum viewer immersed, emotionally moved, perceptually swayed, and awed by the images, but for some viewers, affect is meaningless without facts. These are provided by labels and wall texts which specify locations, the names of the “guilty” entities and the specific practices at work. In the Bologna, Italy venue, one wall displays a global map, small photos, and explanatory text. The textual context brings a reality and pointed authenticity to the imagery. If Burtynsky’s approach were truly politically neutral, he would leave the work untitled and do away with the text, leaving the sublime image to stand alone.

The Rhetorical Power of the film *Anthropocene: The Human Epoch*

As effective as *The Anthropocene Project* is as a museum exhibition in displaying the irrevocably changed Earth, Burtynsky’s documentary film *Anthropocene: The Human Epoch* defies the boundaries and limitations of still photography by creating an

⁷¹ Ursula Biemann, “Geochemistry & Other Planetary Perspectives,” in *Art in the Anthropocene*, ed. Heather M. Davis and Etienne Turpin (London: Open Humanities Press, 2015), 131.

experience where the viewer feels even closer to the actual agents of environmental breakdown. The film, Burtynsky's third collaboration with filmmakers Nicholas de Pencier and Jennifer Baichwal, exceeds the mission of the still photographs by providing context, action, and the participation (though minor) of locals whose lives are directly impacted by industrial resource extraction. The film approaches a moral stance which condemns a variety of human/earth interactions through its tone, filmic techniques, music, and limited narration. *Anthropocene*'s affective agency and rhetorical power to move audiences will be explored here through the transdisciplinary lenses of cognitive film theory, neuroscience, and psychology.

Film and communications scholar Luis Antunes argues that "an audiovisual medium such as film is capable of eliciting perceptual experiences (other than those of vision and sound) without direct sensory stimulation or the character projection and neural mirroring that some cognitive film scholars have argued are prerequisites."⁷² *Anthropocene* is a documentary that falls into the category of "slow aesthetics," distinguished by a lack of character development and an absence of related emotional cues.⁷³ It offers a high degree of experientiality through high resolution film, surround sound, vestibular/proprioceptive stimuli, and thermoception (sense of temperature). But *Anthropocene* mixes slow aesthetics with abrupt scene transitions. In the opening shot we see and hear a roaring fire that fills the entire screen, then are unexpectedly diverted to a scene of water rushing over rocks. These smash cuts, which occur throughout the film, jostle our sense of space, time, and perspective, and disturb rational associations.

⁷² Luis Rocha Antunes, "Slow TV: The Experiential and Multisensory Documentary," in *Cognitive Theory and Documentary Film*, 206.

⁷³ Antunes, "Slow TV," 205.

Quickly returning to the conflagration, which takes place in Nairobi, we learn that thousands of elephant and rhinoceros' tusks have been seized from poachers and intentionally burned to make a public statement. These tusks will be burned in a ceremony rather than sold; no one will make a profit at the expense of dead animals. Burtynsky chose this moment in time, in this place, as an act of political will to expose the unrelenting poaching of big game for monetary purposes; these horrific practices, now banned in most countries, lead to loss of biodiversity. Instead of a series of interviews around a subject, typical in documentaries, he uses the authority and power of images to contrast the Nairobi burn with the interior of a shop in Hong Kong that sells decorative and decadent ivory products.(figs. 2.37, 2.38)



Figure 2.37. *Anthropocene*, video still captured by author



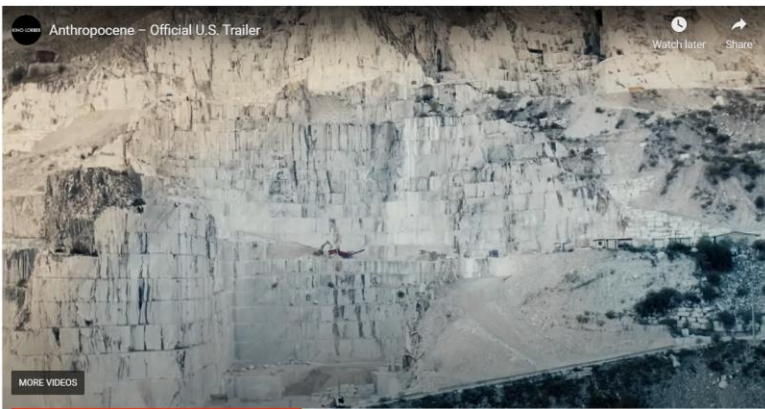
Figure 2.38. *Anthropocene*, video still captured by author

The crackling of the fire; the sensation of heat through the blurring, direction of flames, the slow destruction of the tusks; and the shouts and movements of the soldiers animate the flat neutrality of the photograph taken before the burning. (fig. 2.39)



Figure 2.39. *Building Ivory Tusk Mound*, April 25, Nairobi, Kenya, 2016

The slow aesthetics strategy is effectively used to expose the inherent beauty of marble at Carrara, the labor of its excavation, and its commercialization. As the camera zooms in and out during long takes, our orientation and perspective changes from micro to macro views. The panning also produces changes in our vestibular and proprioceptive senses so that we feel as if we are physically moving in space. Whereas the photographs of Carrara offer a static sublime, (fig. 2.27) the film sequence begins with a cropped, tight view of a red excavator pulverizing the rock. This action demystifies the idealism of the quarry landscape. The camera slowly pans out and widens to reveal the magnitude of the task and the already completed excavations. The last pull-back offers up a surreal view of white towers cradled by the gray peaks. Individual laborers disappear in the immensity of the mountain range, but others appear suddenly as carvers in the interior of a sculpture workshop, where the marble is turned into an artistic enterprise. The subject of their production is Michelangelo's *David*, replicas of which are in great demand among tourists, museums, art schools, and cities around the world. (figs. 2.40, 2.41, 2.42)



Figures 2.40, 2.41, 2.42. Official *Anthropocene* trailer by Kino Lorber, 2018, <https://theanthropocene.org/film/>, video stills captured by author

The giant scale of the *Davids* dwarfs the carvers, whose skill has been relegated to the making of replicas for mass consumption. The slow-moving camera lingers on and around these giants long enough to affect our spatial orientation and sense of relative scale. The angle also makes them symbolic giants of the tourist trade, the appropriation

of Italian heritage, global commerce, and the preciousness of marble. Without forced didacticism or extensive narrative we understand that consumer desire is directing the diminishment of the quarry and there is no end in sight.

Slow film aesthetics is just one of several techniques employed to foster new perceptions and readings of endangered environments. The filmmakers recognize that the neuroscientific theory of embodied cognition plays a strong role in shaping consciousness around climate change's causes and effects. Embodied cognition, according to neuroscientist Antonio Damasio, is the interaction of mind, body, and environment in forming knowledge; the mind rests in both a physical body and its physical environment.⁷⁴ Ecocritical film scholar Alexa Weik von Mossner argues that "embodied cognition is of particular relevance for environmental narratives...in any media that foreground ecological issues and human-nature relationships, often but not always with the openly stated intention of bringing about social change."⁷⁵

Anthropocene heightens our sensual perception of the actual world by simulating the external environment to the point that we become one with it. The filmmakers fly us over lithium evaporation ponds in the Atacama Desert, lead us into the Berezniki tunnels, and allow us to swim with endangered sea turtles and alongside the dying Great Barrier Reef. They position us on precipices of coal, copper, and marble mines in Germany, New Mexico and Italy; place us at the base of ancient tree trunks to watch and hear the explosions that facilitate their clear-felling; expose us to the heat and stench of a smelting factory in Norilsk, Russia and over the billowing smoke of oil refineries in

⁷⁴ Antonio Damasio, *Descartes' Error: Emotion, Reason and the Human Brain* (New York: Penguin, 2005).

⁷⁵ Alexa Weik von Mossner, *Affective ecologies: Empathy, Emotion, and Environmental Narrative* (Columbus, OH: Ohio State University Press, 2017), 3.

Texas. The intention is to move our bodies and minds in sync with the living, breathing, exhausted, and vanishing earth. These techniques facilitate a sense of the interconnectedness among all human and nonhuman entities.⁷⁶ (fig. 2.43)



Figure 2.43. Official Anthropocene trailer by Kino Lorber, 2018, on YouTube video, video still captured by author

But it's not just that the visceral reaction leads to new thought patterns. According to Damasio, feelings in the body, or somatic markers, can trigger emotions which are linked to cognition.⁷⁷ Subsequent research affirms that affect and emotion are of equal importance to analytics and rationality when it comes to decision-making and perception of risk.⁷⁸ Emotional reactions to environmental risks such as climate change can be a powerful driving force for behavior change and trigger a tendency to act.⁷⁹

⁷⁶ Recent MRI research suggests that we map inanimate movement such as that of a waterfall (even one represented in art) onto the motor systems of our brain, simulating and thus understanding it in relation to our own bodies, regardless of the fact that our bodies are not actually capable of performing that particular kind of movement. Mossner, *Affective ecologies*, 73.

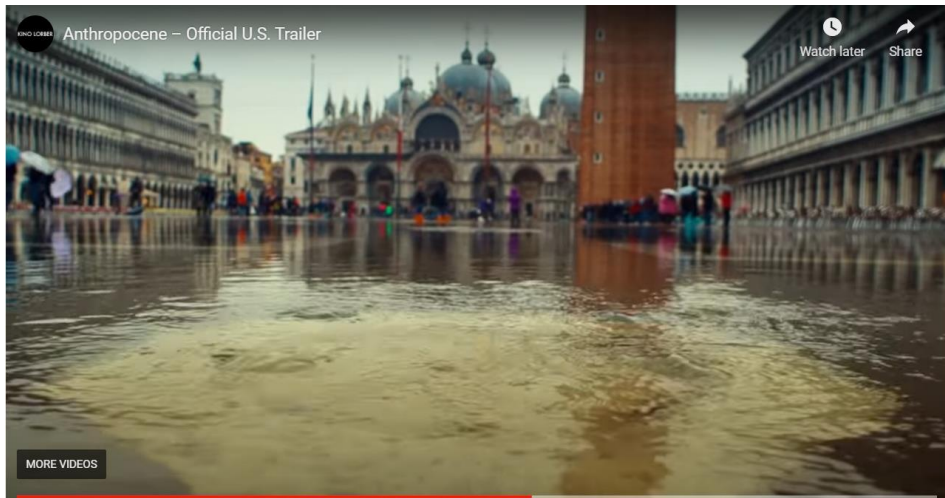
⁷⁷ Damasio, *Descartes' Error*, 165-201.

⁷⁸ Mossner, *Moving Environments: Affect, Emotion, Ecology, and Film*. Environmental Humanities Series (Waterloo, Ontario, Canada: Wilfrid Laurier University Press, 2014), 46.

⁷⁹ Roosen and Klöckner, "Art and Documentaries in Climate Communication," 546.

These assessments have special implications for ecocinema. If the goal of an ecodocumentary about environmental risk is to inspire an inclination to intervene, it should not rely on rational appeals alone, but also provide emotional cues. So how does ecocinema trigger emotion without character development, an extensive narrative, or a plot? Film can move us through “the thick immediacy of cinematic spectacle, the shimmering texture of image and sound as it strikes us and resounds in us viscerally and affectively” according to cultural theorist and ecophilosopher Adrian Ivakhiv.⁸⁰ In *Anthropocene*, land, water, and animals are the cinematic spectacles *and* they assume character roles. With the help of Burtynsky’s camera, scrupulous editing, brilliant color saturation, and ambient music, they take on personality traits, move, retract, live and die. (figs. 2.44, 2.45, 2.46)

⁸⁰ Adrian Ivakhiv quoted in Mossner, *Moving Environments*, 3.



Figures 2.44, 2.45, 2.46. Official *Anthropocene* trailer by Kino Lorber, 2018, on YouTube video, video stills captured by author

The earth sinks (Berezniki), anemones and coral reefs tremble and die (Australia), water invades (Venice), log booms float (Lagos), land suffocates from plastic (Nairobi), mineral tailings poison (Florida), toxic smoke wafts (Texas), endangered sea turtles swim, oil chokes deltas (Nigeria), ancient forests disappear (North Rhine-Westphalia). Each scene is accompanied by music that heightens the dramatic action. Much of it is elegiac, and it builds throughout the film, ending with a booming crescendo at the ivory burning ceremony. The earth's "stories" are meant to move the audience; short narratives of local engagement and resistance play a lesser role in evoking emotion. Narrative restraint is an artistic choice that privileges images, music, and proprioception in creating affect. It also elevates the artistry, distinguishing *The Anthropocene Project* from ecodocumentaries such as *An Inconvenient Truth* (2006) and its sequel *An Inconvenient Sequel: Truth to Power* (2017), *Gasland* (2010), and *Ice on Fire* (2019) which rely heavily on factual narration.

The opposite strategy is used by Ursula Biemann in her short video *Deep Weather*. (fig. 2.47) Though both artists "think with geological time scales and link seemingly disparate events across the globe,"⁸¹ Biemann limits her focus to the connection between the vast excavation in the Alberta, Canada Tar Sands and the sea rise along the coast of Bangladesh. In the second part of her video the artist embeds herself amongst scores of Bangladeshis trying to bolster their coastline with sand and mud bags. Their toil appears endless. The artist's whispered narration informs the viewer that many will die in their sleep because they will not hear the primitive cyclone warnings. The strength of Biemann's video is in its emotional appeal; the audience is

⁸¹ Biemann, in *Art in the Anthropocene*, 131.

meant to empathize with the plight of the Bangladeshis in their real time crisis. The shift in location, pacing, narration, and documentation in the two parts of the video allow the viewer to witness the far-flung human impact of resource extraction in distant unpopulated regions.



Figure 2.47. Ursula Biemann, *Deep Weather*, 2013, video stills captured by author

Anthropocene's immersive techniques also facilitate a phenomenological experience. The viewer is unwittingly swept along with the onward march of capitalist and economic forces that impose themselves upon the land. Ultimately, in the closing moments, there is time for reflection and a reckoning as the voice of narrator Alicia Vikander reminds us that “the tenacity and ingenuity that helped us thrive can also help us pull these systems back to a safe place for all life on earth.” This brief, rather neutral statement, along with similar ones sprinkled throughout the film, is far from provocative. Burtynsky has repeatedly said that he gives the viewer critical agency to decide the earth’s fate. But by constructing new non-linear realities on the screen—connecting between places, institutions, people, and environmental injustice—he is subtly

manipulating their point of view, moving them to realize that consumer culture and fossil-fuel dependency continue to drive extractive industries.

Anthropocene achieves a precarious balance between truth telling, high aesthetic quality, and affect. Burtynsky has frustrated environmental historians by not being accusatory enough, refusing to make outright suggestions for immediate remediation, and for his avoidance of politics and causality. Environment and technology historian Sara B. Pritchard considers this film a work of “depoliticized aesthetics” due to its generalizations, narrative absences, and “ubiquitous references to the monolithic ‘human’ and ‘our’ effects on the planet.”⁸² While it is true that the full narrative of each toxic episode is not shown or spoken, these absences may actually strengthen the film’s effectiveness. One psychological study comparing the emotional outcomes of different works of environmental art found that participants preferred the absence of forceful suggestions for change. It helped them feel more relaxed about the possibility of change, less coerced in the process, and therefore more open and accepting to what was being conveyed.⁸³

The film deploys some strategies that convey a universality of human responsibility for climate change. These include aerial views of nameless landscapes, the occasional mention of ubiquitous carbon or electricity usage, a lack of distinction between unequal effects on people across the globe, and the very title *Anthropocene*, which denotes human collectivity and inevitable human-induced environmental transformations. But the film also clearly shows the aggressive actions of government, state, and corporate industrialists who are the worst offenders.

⁸² Pritchard, “Dangerous Beauty,” 378.

⁸³ Roosen and Klöckner, “Art and Documentaries in Climate Communication,” 542.

In sum, *Anthropocene* presents the destructive forces of capitalist economics at work in real time, and the slow pacing makes us ponder the long-term geological effects. Individual scenes featuring earth, air, water, and fire initially seem decontextualized, but the smash cuts force ecological connections across time and space. Carefully sequenced shots of local disruptions lead to a sense of unending global disruptions. The planetary perspective and action transform Burtynsky's still images from autonomous art into vehicles of sociopolitical engagement for the artist. In other words, he inserts himself into remote, contested, and toxic worlds, engages with stakeholders and communities, and shares this experience and visual information with the rest of the world for us to digest, and possibly act upon.

Audience Response to *The Anthropocene Project*

The North American and European popular response to *The Anthropocene Project* has been overwhelmingly positive. The museum exhibitions, associated gallery shows, and screenings have been written up extensively in a wide variety of publications including *Time Magazine*, *the BBC*, *National Geographic*, *the Economist*, and numerous journals. Burtynsky, de Pencier, and Baichwal have been besieged by requests for interviews, podcasts, lectures, and gallery tours. An AGO Museum study found that the majority of visitors rated their experience as “superior” or “excellent,” and the exhibition garnered a Net Promoter score of 71, making it one of the highest rated AGO exhibitions of the past decade. The study also found that visitors felt transported, experienced a range of emotions (mostly worried and sad), discussed the Anthropocene concept with others at the exit, and expressed a desire to change some of their

consumer practices.⁸⁴ As has been discussed, scholars in the environmental humanities such as Demos, Ray, Cammaer, Peeples and Pritchard⁸⁵ have given Burtynsky's photos and films less favorable reviews as works of environmental advocacy on the grounds of the works' overarching simplicity and neutrality, uneven attention to uneven effects of climate change, and depoliticized aesthetics. The depiction of various industrial labor forces shown contentedly performing their work has engendered an array of responses. Oil, mining, and agribusiness executives or technology specialists might be proud or awed at the modernity and efficiency of operations, but academics point out that "we don't see images depicting the matrix of relationships between public and private stakeholders, nor the historicities of how these relationships came to be. Anonymizing bureaucratic and corporate structures in *The Anthropocene Project* serves to obfuscate the relationships between what incentivizes human activity and the capital motivating it."⁸⁶ The absence of history, context, personal stories, and projected future threats lessen our ability to deconstruct and solve the climate crisis.

While the images are potent and revelatory, they appear to speak and function in different registers of thought and emotion to different communities. Affluent, western audiences are moved to comment on social media. Characteristic remarks refer to the human impact on the planet, the recognition of individual responsibility, and to images that shock, haunt, and motivate people to take action.⁸⁷ It is difficult if not impossible to gauge a correlation between their experience and behavioral change. Policy changes

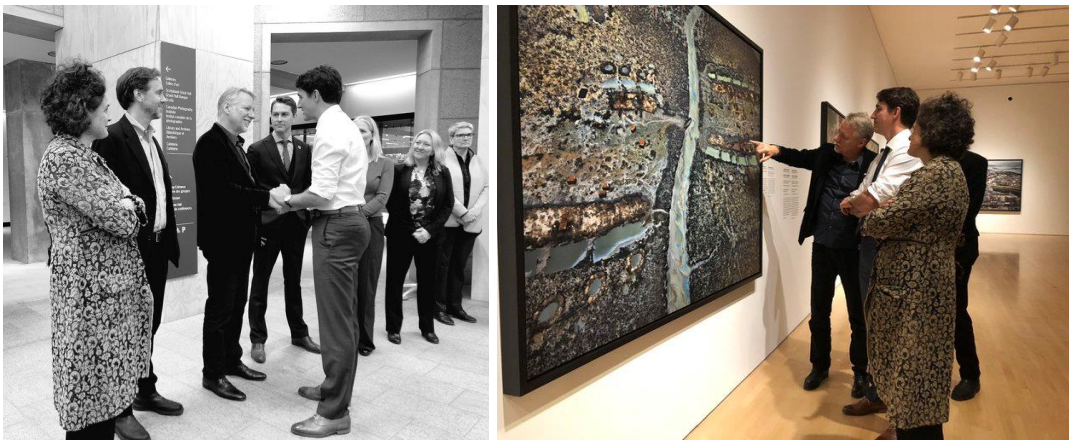
⁸⁴ Hudson Hill, "A Terrible Beauty," 83. This article contains statistics and analysis about visitor engagement, emotions, outcomes, and outreach.

⁸⁵ Of this group, only Pritchard has written specifically on *The Anthropocene Project*.

⁸⁶ Stevens and Wainwright, "A Review of the Anthropocene Project," 574.

⁸⁷ *The Anthropocene Project* had 5,000 Twitter followers in October 2018, the month of its opening in Canada. <https://twitter.com/i/events/1050410671882559492?s=20>

resulting from the exhibition of ecoart are few and far between. Politicians like Canadian Prime Minister Justin Trudeau, who visited the exhibit in 2018, posted a Tweet after visiting the exhibition—" We have a responsibility to our kids & their kids to protect our environment. The #Anthropocene exhibit is a stark reminder that the time to act is now. It's why we're putting a price on pollution & what I spoke about with students from @CcSamuelGenest at the @NatGalleryCan today." (figs. 2.48, 2.49) Yet destructive environmental practices continue under his administration.⁸⁸



Figures 2.48, 2.49. Justin Trudeau at *Anthropocene* exhibit, National Gallery of Canada, October 29, 2018, Photograph by Adam Scotti

Burtynsky has said in interviews that corporate managers or owners view the images of their industrial facilities with a sense of pride in the work that they perform and that is why they collect his work. In another context, these same images could trigger negative emotions in people whose health is impacted daily by poisoned air and water. Engineers respond positively because they appreciate Burtynsky's systems

⁸⁸ See <https://twitter.com/justintrudeau/status/1057010196982173697?s=27>. Yet under Trudeau's government, Canada has seen a rise in greenhouse gas emissions due to continued excavation of the Alberta Tar Sands and the cutting down of the last old-growth forest in Canada, where the Fairy Creek blockade is still going on. See [Ian Austen](#) and [Christopher Flavelle](#), "Trudeau was a global climate hero. Now Canada Risks Falling Behind," *New York Times*, April 21, 2021, <https://www.nytimes.com/2021/04/21/world/canada/trudeau-climate-oil-sands.html>

approach.⁸⁹ There are numerous other variables that can affect visitor reaction, including age, education, exposure to art, knowledge and acceptance of the veracity of climate change, and the political context in which it is shown. The ability to be emotionally and cognitively open also plays a role. In 2015, an important study on climate change art and its psychological effect on spectators concluded that what psychologists termed “the awesome solution”—described as beautiful and colorful depictions of sublime nature that also point toward solutions to environmental problems—caused the highest emotional and cognitive activation.⁹⁰ *The Anthropocene Project* was completed after that study. It would not fall into “the awesome solution” category. It would fit somewhere between what psychologists termed “the challenging dystopia” (described as “dark in color,” “contains metals” (!), “death and destruction,” “confrontational,” “shocking”) and “the mediocre mythology” (described as “a colorful mix of materials,” “shows interconnectedness of the climate system, economic system, and other systems,” made people stop, sense of awe, sadness and disappointment). Because of its multifaceted characteristics and affects, *The Anthropocene Project* is not easily pigeonholed.

Anthropocene: The Human Epoch is the recipient of numerous prestigious film awards including the Rogers Best Canadian Film (Toronto Film Critics Association) and Best Canadian Documentary (Vancouver Film Critics Circle) in 2018. The film was recognized by Variety (US) as one of the Best Documentaries of 2019.⁹¹ Scholarly

⁸⁹ “Edward Burtynsky presents: Nature transformed through water at Arup,” YouTube video, June 15, 2018, <https://www.youtube.com/watch?v=Qp6y6wzJWi4>

⁹⁰ L. K. Sommer and C. A. Klöckner, “Does Activist Art Have the Capacity to Raise Awareness in Audiences? A Study on Climate Change Art at the ArtCOP21 Event in Paris,” *Psychology of Aesthetics, Creativity, and the Arts* (July 1, 2019): 10-12.

⁹¹ For a full list of awards and honors from 2018-2020 see <https://theanthropocene.org/film/>

critical reception mirrors the criticism of Burtynsky's photographs; it consistently points out the absence of context, the elision of blame, and the foregrounding of sublime images over long-term consequences.

The move from still to motion pictures in *The Anthropocene Project* produces correspondingly stronger affective experiences. The photographs *show*, the films both *show and tell*. The photographs provide momentary glimpses into often unknown sites/environments through the lens of the toxic sublime, which emphasizes their abstract beauty. The viewer is initially attracted, and then shocked or repulsed to learn what these images actually represent. Then they move onto the next photograph. When using the AR applications, a closer relationship is enabled between humans and compromised ecological sites or endangered species, due to the three-dimensional qualities and location sounds. The film facilitates the lengthiest immersion into image and content, by supplying long, panoramic takes, zooming in and out, including short conversations with workers and residents at contested sites, heightening the character roles of nonhuman actors, the ambient music, and narration (though minimal). These strategies coalesce into a highly affective filmic experience, one which has been praised by film critics.

Conclusion

The Anthropocene Project comprises such a large compilation of different media, modes, and networks that it defies a tidy summation. Through sublime aesthetics and subliminal techniques, it brings attention to human-induced environmental destruction in a way that has so far gained wide spectatorship. While foregrounding astounding or

appealing images, the project nevertheless includes details of labor and machinery, rupture and disruption, disturbing political practices, poverty and pollution, carbon-impactful commodities, and the post-human landscape. The abstract concepts of climate change and hyperobjects find tangibility through a series of over-scaled, vivid pictures of ecologically impacted locations around the world. Each picture or film sequence builds upon the last; as our engagement with earth, sea, and animals deepens, and as we immerse ourselves in their worlds and follow their plight, we simultaneously recollect the recently viewed photographs or scenes of the practices contributing to their decimation. This continuous visual jogging contributes to a heightened awareness. The visceral beauty and cognitive dissonance produce conflicting perceptions and emotions that can lead to self-reflection about responsibility and stewardship.

As to *The Anthropocene Project's* agency as a work of activism, we may find the comments of political ecologist Ekaterina Chertkovskaya useful:

Artists create works that are often immensely beautiful, but their beauty and even sublimity do not eclipse their political power—indeed, such aesthetic factors are key to the works' political impact. Artists working in this thematic area must tread a fine line to make their art both beautiful and impactful, and the agency of viewers may still escape or exceed the artists' intentions.⁹²

⁹² Ekaterina Chertkovskaya, Karl Holmberg, Moa Petersén, Johannes Strippel, and Sara Ullström, "Making Visible, Rendering Obscure: Reading the Plastic Crisis through Contemporary Artistic Visual Representations," *Global Sustainability* 3 (May 2020). doi:10.1017/sus.2020.10.

The means of eliciting affect (physiological, neural, vestibular/proprioceptive, aural) are equally important as cognitive strategies in fostering new epistemologies of the causes and effects of climate change. They create an atmosphere inside the exhibition or cinema where one is moved enough to think about the possibility of action, whether personal or collective. Affect is known to linger. Once the viewer is outside the venue, those emotions can influence subsequent behavior and decision-making on an individual level. *The Anthropocene Project* may not directly censure the corporations and industries that do the most harm to the planet, nor does it drill down to the negligent actions of individuals, but it contains enough overwhelming visual evidence of environmental and ecological disruption to potentially change the perceptions of even the most apathetic of viewers.

Chapter 3

The *Pollution Pods* Experience

Despite the negative connotation of the title, the dramatic and futuristic aesthetics of Michael Pinsky's *Pollution Pods* stimulate curiosity and excitement about what lies within. Visitors are enticed to enter five linked transparent geodesic domes, each of which represents a city. The cities themselves are invisible, but visitors inhabit them through their senses. The first one evokes the pine-scented atmosphere of the island of Tautra, near the city of Trondheim, Norway. This pod serves as a “baseline” of fresh air quality against which others are compared. As visitors move through progressively polluted spaces, their senses join with varied emotions. London smells primarily of diesel fumes (nitrogen dioxide) with slight fog; São Paulo, of vinegar due to ethanol-based fuel; New Delhi of diesel, large particulates from the unsealed roads, and smoke from burning plastic and crop burning. Beijing's scent has been described as that of sulfur, and coal and wood from domestic heating. Except for the Norway pod, the odors triggered watery eyes, headaches, and claustrophobia, and feelings of lightheadedness, toxicity and sickness associated with airborne environmental risk.¹ (figs. 3.1, 3.2)

¹ Accounts of visitor experiences are easily found on the Internet. Around 40 videos show visitors inside the Pods. An example is BBC's “London Live Pollution Pods,” April 27, 2018, <https://www.youtube.com/watch?v=B1Yus0VPET4>. Pinsky's website includes links to hundreds of journalistic pieces which include visitor quotes about their sensory experiences. See <http://www.michaelpinsky.com/reviews/>. Another large selection of reviews and press can be found at the Cape Farewell website, <https://capefarewell.com/pollution-pods/reviews.html>. Pages of a visitor comment book from the Portland, Dorset, UK venue were made available to the author. All works illustrated are by Michael Pinsky unless otherwise noted.



Figure 3.1. Michael Pinsky, *Pollution Pods*, first iteration, Tautra, Norway, 2017, spruce timber, plastic membrane, metal



Figure 3.2. *Pollution Pods*, Somerset House, London, 2018

Pollution Pods is an aesthetic vehicle which conveys scientific data in a non-rational way. By recreating the distinct air quality of several cities, it provides a unique phenomenological experience; that is, the visitor becomes hyperaware of himself or

herself in this atmosphere, in this moment in time. As the body adjusts, or tries to adjust to different atmospheres in each pod, it sends messages about safety or danger to the brain.² That is, the atmosphere has a strong impact on the visitor's ability to understand the data about the air quality, which is shown in a small computer display in each pod.

Crossover studies in social science, neuroscience, and science communication have shown that macro issues like climate change only gain significance to the general public when there is enough "sensorial thinking," or local, sensitizing, embodied experiences in individuals.³ *Pollution Pods* is a paradigm of sensorial aesthetic experience that makes air pollution personal and comprehensible. Feelings in turn lead to emotions, which also play an important role in personalizing abstract issues. Damasio's "somatic marker theory" has relevance here. Somatic markers are feelings in the body that are associated with emotions. These emotions are neurologically connected to the prefrontal cortex of the brain, the center responsible for guiding behavior, particularly decision-making.⁴ So *Pollution Pods* stimulates a variety of physical reactions which, via the emotions, can lead to cognitive changes.

The atmosphere in *Pollution Pods* creates a strong affect—the emotional, physical, and sensual conditions created within each pod. Affect is said to bridge the

² The science behind this is explained in a video showing the artist, Greta Thunberg, and Dr. Maria Neira of the World Health Organization inside the Pods. "Greta Thunberg Experiences 'Pollution Pods' at UN Youth Climate Summit," can be found at Now This News, <https://nowthisnews.com/videos/news/greta-thunberg-experiences-pollution-pods-at-un-youth-climate-summit>

³ For a summary of these studies see D. Galafassi et al., "Restoring our senses, restoring the Earth. Fostering imaginative capacities through the arts for envisioning climate transformations," *Elementa: Science of the Anthropocene*, 6:69 (Nov. 21, 2018), 2–3. DOI: <https://doi.org/10.1525/elementa.330>. Other studies suggest alternate strategies to the sensorial in communicating the salience of climate change. See Ulrike Hahn & Pauwke Berkers, "Visualizing climate change: an exploratory study of the effectiveness of artistic information visualizations," *World Art* (June 4, 2020), DOI: [10.1080/21500894.2020.1769718](https://doi.org/10.1080/21500894.2020.1769718)

⁴ Antonio Damasio, *Descartes' Error: Emotion, Reason and the Human Brain* (New York: Penguin, 2005).

divide between feeling and cognition, so it is an essential tool in non-didactic art.⁵ Additionally, affect is not necessarily conscious, but conscious experience may issue from it.⁶ In *Pollution Pods*, this conscious experience comes slowly through the “back door” rather than through a grand entrance, by the clever sequencing of rooms (that is, as the mind adjusts differently to the conditions in each pod). Consciousness also emerges through the ambiguity arising from the discrepancy between perceived appearances and what lies within. Pinsky interrupts our expectations of a futuristic, pollutant-free journey by manipulating our senses, and thus, our brains. Zeki’s theories of ambiguity and the brain⁷ posit that when there are high levels of ambiguity in certain works of art, the viewer must engage longer to make sense of it. *Pollution Pods* initially appears enticing, then turns into an experience of the terrible sublime. According to Zeki, “the relationship of ambiguity to consciousness is critical.”⁸

Pinsky aims to reduce visitors’ sense of psychological distance from climate change by constructing a visually memorable space that lures people in, then confronts them in surprising ways. The idea of moving through intriguing spaces is replaced by a feeling of entrapment in odorous cells. (fig. 3.3) What began as a seemingly benign adventure turns into a philosophical and ethical one. The installation forces a critical engagement with air pollution and poses some of the following questions: What is causing the pollution in each city that gives it a distinctive odor? What populations are

⁵ Brian Massumi proposes affectivity as crucial to an understanding of the absolute inseparability of thought and feeling and, argues for the lack of distinction between synesthetic and cognitive states. See Brian Massumi, *Parables for the Virtual: Movement, Affect, Sensation* (Durham, NC: Duke University Press, 2002) as paraphrased in Erika Doss, “Affect,” *American Art* 23, no. 1 (Spring 2009): 9.

⁶ Steven Shaviro, “Affect vs. Emotion,” *The Cine-Files*, issue 10 (Spring 2016).

⁷ Semir Zeki, *Inner vision: an exploration of art and the brain* (Oxford: Oxford University Press, 2003). “Art and the Brain,” *Daedalus* 127, no. 2, “The Brain” (Spring, 1998): 71-103. “The Neurology of Ambiguity,” *Consciousness and Cognition* 13 (2004): 173-196.

⁸ Zeki, “The Neurology of Ambiguity,” 174.

regularly exposed to the real toxic particulates that visitors are voluntarily sampling?

How does that affect their health and sanity? What can I do to ameliorate air pollution?

What are the larger economic, social, and political forces that contribute to the problem?



Figure 3.3. *Pollution Pods*, Melbourne installation, August 2019

The Nuts and Bolts of *Pollution Pods*

The *Pollution Pods* were commissioned for a research project called Climart, launched in 2014 at the Norwegian University of Science and Technology (NTNU). Scientists, psychologists, and artists studied and assessed how audiences were affected by climate-related artwork.⁹ To that end, they have launched climate art installations throughout Europe, including at ArtCOP21, which ran simultaneous to the 2015 United Nations Climate Change Conference (COP21) in Paris. Pinsky's design

⁹ The Climart project (2014-2018) was led and housed at the Institute of Psychology at NTNU, Trondheim, Norway. As of 2017, they had analyzed thirty-seven installations. The team included Christian A. Klöckner, environmental psychologist, NTNU (project leader); David Buckland, Director, Cape Farewell; Sam Jury, artist (co-coordinator); Laura Sommer, environmental psychologist, NTNU; Paul Stern, environmental psychologist, National Research Council; Janet Swim, environmental psychologist, Penn State University; Martina Zienert & Joachim Börner, environmental communicators, Kolleg für Management und Gestaltung nachhaltiger Entwicklung; Peter Huybers, climate scientist, Harvard University; and Edgar Hertwich, environmental scientist, Yale University.

took into consideration the results of Climart's survey in Paris as well as other earlier installations.¹⁰

Pollution Pods didn't start with an image. Rather it evolved out of conversations about air pollution. Pinsky's sketchbook was filled with words and concepts prior to architectural drawings. (fig. 3.4)

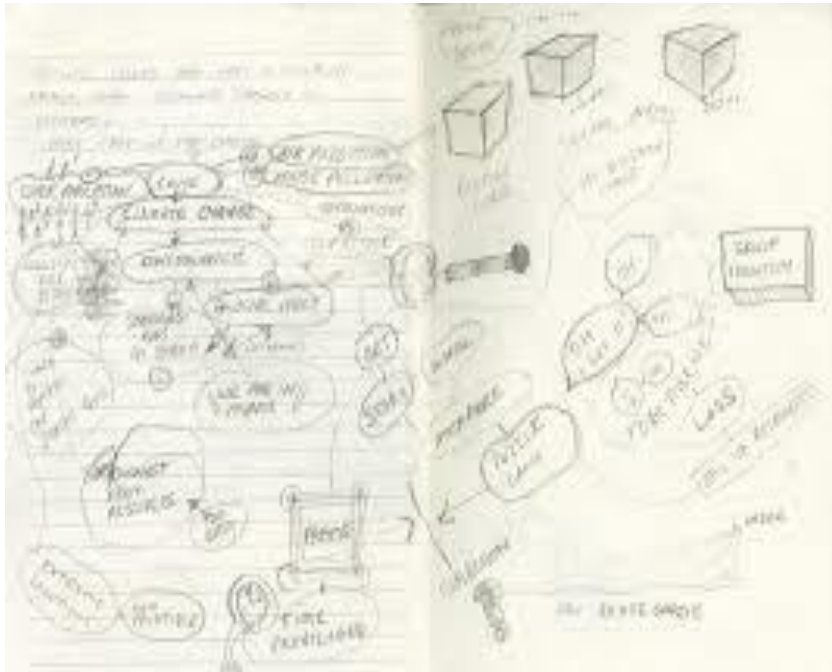


Figure 3.4. Michael Pinsky sketchbook, Courtesy of the Artist

He disclosed, “You have your political agendas that you want to push. Then on the other hand you ask how is this going to manifest physically. The visual part came later in the process ... We’re talking about climate change and the causes and the

¹⁰ See L. K. Sommer and C. A. Klöckner, “Does Activist Art Have the Capacity to Raise Awareness in Audiences? A Study on Climate Change Art at the ArtCOP21 Event in Paris,” *Psychology of Aesthetics, Creativity, and the Arts* (July 1, 2019).

consequences and how we can deal with it. Then we moved on to ‘how do we get people to engage with this?’”¹¹

The first iteration of the geodesic *Pods* was built in Norway with the help of local craftspeople, using local spruce recovered from the roadside. The spruce rods are snapped into hexagonal joints to form the triangular frame. The plastic membrane is attached to the frame with metal hooks. With enough man- and woman-power, the structure is easy to assemble and disassemble, and the materials have lasted through at least fifteen exhibitions.¹² (fig. 3.5)



Figure 3.5. Michael Pinsky inside *Pollution Pods* at Somerset House, London

¹¹ Michael Pinsky interviewed by the author via Skype, November 2019.

¹² Pinsky, email to author, April 1, 2021.

Short corridors keep each dome's unique environment separate. Each pod contains the name of the city and a screen showing its air quality data. Continuous movement through the individuated spaces is integral to the *Pollution Pods* experience, so that contrasts in atmosphere are acutely felt. (fig. 3.6)



Figure 3.6. Interior, *Pollution Pods*, TED 2019 conference in Vancouver

Unlike many museum exhibitions or installations where the visitor moves through opaque-walled galleries in a prescribed direction, *Pods*' transparent walls invite awareness and anticipation of the other parts of the exhibition. With the domes connected in a ring formation, the visitor moves through each of five pods and ends up back at the first. (fig. 3.7)



Figure 3.7. *Pollution Pods*, TED conference, Vancouver convention center, April 2019

This configuration symbolically reinforces the idea of all corners of the globe being connected, just as air pollution knows no boundaries. The plastic-walled divisions of each Pod are only temporary; in the real world all such divisions are illusory. The relatively clean air of Tautra, Norway will eventually merge with the dense particulate air of New Delhi.

Pinsky had wanted to transport the actual air from each city but was advised that health and safety issues were at stake. With the help of chemists and odor specialists, he devised chemical mixtures which emulated the presence of ozone, particulate matter, nitrogen dioxide, sulphur dioxide and carbon monoxide.¹³ Some of the smells occurred naturally, while others were completely man-made. The experiences were

¹³ Scents for the Norway iteration were created by Jorg Hempenius and the Norwegian Institute for Air Research. Later iterations involved collaborations with International Flavors and Fragrances for scent, filters from Airlabs, and air quality index equipment from Plume Labs.

intensified by heating and/or cooling the different domes according to the target temperature with air-conditioning systems (London & Beijing were cooled, New Delhi and Sao Paolo were heated). Humidity was added with air humidifiers (London, New Delhi) and the illusion of particulate matter in the air was added by fog machines in the New Delhi dome. Smells designed by a perfume maker were atomized through professional automatic perfume dispensers (key smells involved diesel fumes for London, burned grass, plants and plastic for New Delhi, burnt coal for Beijing, and burned ethanol for Sao Paolo). Air in the Norway dome was purified through air cleaning technology provided by Airlabs. Traces of ozone were added to the Sao Paolo dome.¹⁴

Climart project leader Christian Klöckner explains:

We don't want the air in the domes to expose the public to danger, so we'll remove the most dangerous substances and replace them with harmless ingredients and fragrances that resemble the real city air. The Norwegian Institute for Air Research (NILU) is contributing its expertise to create the right air mixtures for each dome, so that the smell and feel of breathing in the air is realistic.¹⁵

Ironically, anthropogenic means were used to create artificial smells of human-induced pollution in an exhibition which critiques such outcomes.¹⁶

¹⁴ Christian Klöckner to the author, email, April 6, 2021.

¹⁵ Vibeke Ann Pettersen, "Stinky City Air as Climate Art," *Norwegian SciTech News*, June 2, 2017, <https://norwegianscitechnews.com/2017/06/stinky-city-air-climate-art/>.

¹⁶ This irony, along with the use of toxic art supplies, non-eco-friendly packaging materials, fossil fueled modes of transportation, and mined/industrially processed products, in other words anything that contributes to CO2 emissions, are ongoing ethical problems in ecoart. Most artists defend their practices by claiming their educational/humanities/philosophical benefits outweigh their carbon footprint. Many are

London as Locus of Climate Discourse and Pinsky's Formative Work

Pinsky (b. Scotland, 1967), who holds a PhD from the Royal College of Art and is a self-avowed environmental activist,¹⁷ successfully merges art and activism in the public sphere, with work that has fascinated and impacted thousands of people. Pinsky lives in London, a city historically associated with air pollution since the advent of the Industrial Revolution. From 2016 to 2020, London's nitrogen dioxide, coarse and fine particulate matter all exceeded the World Health Organization recommendations.¹⁸ Most of its pollution is caused by vehicular traffic, and domestic and commercial heating systems. However, with the election of a new mayor in 2016, London has seen numerous initiatives to reduce carbon emissions, including changes in transportation policy, climate strikes, bicycle lanes, low-emission zones, fines for highly polluting vehicles, and car-free Sundays, that have resulted in a dramatic reduction of polluted air.¹⁹ Galleries, museums, and other nonprofit organizations offer art and programming

beginning to reduce their carbon footprint by refusing to fly, using recycled or discarded materials, and purchasing carbon offsets. The author has been in conversation with several artists about this issue, including Pinsky himself, Justin Brice Guariglia, Jenny Kendler, and Diane Burko. For an early public wakeup call on this problem see Lucy Siegle, "Ethical living: can art be environmentally friendly?" *The Guardian*, April 14, 2012, <https://www.theguardian.com/environment/2012/apr/15/lucy-siegle-ethical-art-paint>.

¹⁷ Pinsky interview, 2019.

¹⁸ "Air pollution monitoring data in London: 2016 to 2020," Greater London Authority, February 2020, https://www.london.gov.uk/sites/default/files/air_pollution_monitoring_data_in_london_2016_to_2020_feb_2020.pdf. The 2020 World Air Quality report by Switzerland-based air quality technology company IQAir showed that air quality improved in 84% of all monitored countries, due to Covid-19-related lockdowns and a drop in fossil fuel consumption in 2020. London air quality improved by 16%. <https://www.forbes.com/sites/dishashetty/2021/03/16/22-out-of-top-30-worlds-most-polluted-cities-in-india/?sh=7cc28e5475ad>.

¹⁹ Damian Carrington, "Dramatic' plunge in London air pollution since 2016, report finds," *The Guardian*, Oct. 3, 2020, <https://www.theguardian.com/environment/2020/oct/03/dramatic-plunge-in-london-air-pollution-since-2016-report-finds>.

which foreground fossil fuel practices and their link to climate change.²⁰ Protesters like Liberate Tate, Extinction Rebellion, and BP or not BP, expose some of the worst climate offenders who often mask their complicity in climate change through the arena of art philanthropy.²¹ Pinsky's practice aligns with these initiatives. His numerous public art projects are based on an ethical stance that critiques human exploitation of energy sources, dependency on cars, over-consumption of mass-produced goods, and global industrial practices which burn fossil fuels that foul our air and water.

Despite the fact that Pinsky has been awarded several public commissions over the last decade, and that his installation *Pollution Pods* (2017-20) has brought him international visibility and acclaim, he has received limited scholarly attention.²² This study aims to redress this gap by demonstrating how Pinsky's public art installations deliver an immediate and visceral re-orientation of attitudes toward energy consumption, air pollution, and rising sea levels. By juxtaposing the familiar with the strange, the aesthetically appealing with ugliness, and the consumer object with nature, Pinsky interrupts the fields of normal experience to prompt attention to the causes and effects of climate change. He further disorients the viewer by creating welcoming immersive spaces that turn out to be physically or psychologically uncomfortable. He

²⁰ The Tate Modern, the Serpentine Galleries, the Being Human Festival, Wellcome Collection, and the British Museum have been exemplary in these endeavors.

²¹ Damien Gayle, "Climate activists bring Trojan horse to British Museum in BP protest," *The Guardian*, Feb.7, 2020, <https://www.theguardian.com/culture/2020/feb/07/climate-activists-bring-trojan-horse-to-british-museum>. Claire Selvin, "British Museum Workers and Former Trustee Issue Statement in Support of BP or Not BP Protest," *ARTnews*, Feb.10, 2020, <https://www.artnews.com/art-news/news/british-museum-bp-or-not-bp-trojan-horse-1202677412/>.

²² *Pods* has received hundreds of reviews, and Pinsky has been interviewed by many journalists. For a fairly comprehensive selection of articles see Pinsky's website, <http://www.michaelpinsky.com/> and the Climart website, <https://www.climart.info/>. Pinsky's recent work has been studied and written about by environmental psychologists and climate scientists, but as of January 2021, only one art scholar. See David Cross, "The Partition of the World." (Michael Pinsky Pollution Pods) *The Earth Issue*, 004 (October 2020): 49-54. See bibliography for one monograph and a few gallery publications prior to 2008.

states about his projects, “An artwork that is visually memorable, seductive, surprising and shocking can etch itself in people’s minds in a way the written word cannot. The visual manifestation of the work can function as a shortcut to the themes it is trying to embrace.”²³ Pinsky’s art is an experiential supplement to scientific discourse and journalism. Though intended to disrupt, the work exhibits formal aesthetic qualities such as color harmony, rhythm, defined shapes, and balanced compositions. Though many of his installations and exhibits cannot be called architecture per se, they utilize architectural components and motifs such as monoliths, symmetry, mathematically ordered spaces, geometric forms, repetition, and focused lighting. While the messages inherent in the work are often dystopian, the methods for their delivery come in aesthetically pleasing packages.

Prior to *Pollution Pods*’ sensory focus, Pinsky deployed visual and cerebral strategies to create an aesthetics that intervened in daily experience. They include shock through displacement or rearrangement, ambiguity of form vs. message, and drama through displays of imagined catastrophes. These tactics provide the sort of rupture that Yusoff urges to combat complacency and redistribute our sensibilities towards our consumer culture and its relationship to climate breakdown. Two paradigms of visual and mental rupture are *L’eau Qui Dort* (2015) and *Come Hell or High Water* (2006). In both of these installations, the river serves as backdrop to cars and other mass-produced items that have been jettisoned. They are emblematic of the West’s throwaway culture.

²³ Michael Pinsky and Laura Sommer, “Pollution Pods: can art change people’s perception of climate change and air pollution?”, *Field Actions Science Reports* Special Issue 21 (Feb. 24, 2020), 94.

L'eau Qui Dort (figs. 3.8, 3.9) highlights the wasteful practices of consumer culture by dredging up objects that have sunk in the Ourcq canal in Paris.²⁴ Some, like the mud and algae-caked bicycle, (fig. 3.9) have begun to merge with the canal's ecosystem. Pinsky aestheticizes the detritus in several ways—by framing each object as a piece of sculpture, by arranging them as if on exhibit in a gallery, and lighting the whole in decorative colored spotlights. The light illuminates the secrets of our ecological footprints and casts a halo of shame on each discarded item. An eerie soundscape composed of hitting the objects with “instruments” magnifies the dystopian scene.



Figure 3.8. *L'eau qui dort*, Ourcq Canal, Paris, 2015

²⁴ *L'eau Qui Dort* was commissioned by COAL for La Villette during COP21 in Paris.



Figure 3.9. *L'eau qui dort*, Ourcq Canal, Paris, 2015

Come Hell or High Water, (figs. 3.10, 3.11) a line of colorful cars partly submerged in the River Tyne at Newcastle, England, bears an ironic message on the perils of industrialized transportation. Once viewed as the modern and speedy alternative to the river boats, fossil-fueled cars are gradually being replaced by their electric counterparts. Further, the roads they travel may literally disappear due to rising sea levels, which have the potential to decimate much of England's eastern coastline and cause inland rivers to flood.²⁵ Their demise is imagined as a death march or funeral procession on the water. While shock and drama cause a cognitive reckoning with capitalism's planned obsolescence of goods, it is somewhat mitigated by the appealing

²⁵ David Shukman, "Coastal floods warning in UK as sea levels rise," BBC News, Feb. 14, 2020, <https://www.bbc.com/news/science-environment-51283716>. Anne De La Vega-Leinert and Robert J. Nicholls, "Potential Implications of Sea-Level Rise for Great Britain," *Journal of Coastal Research* 24, no. 2 (2008): 342-57. Accessed April 7, 2021. <http://www.jstor.org/stable/30137840>.

arrangement of colorful geometric forms. Though an activist, Pinsky never loses sight of aesthetics.



Figure 3-10. *Come Hell or High Water*, Newcastle, England, 2006

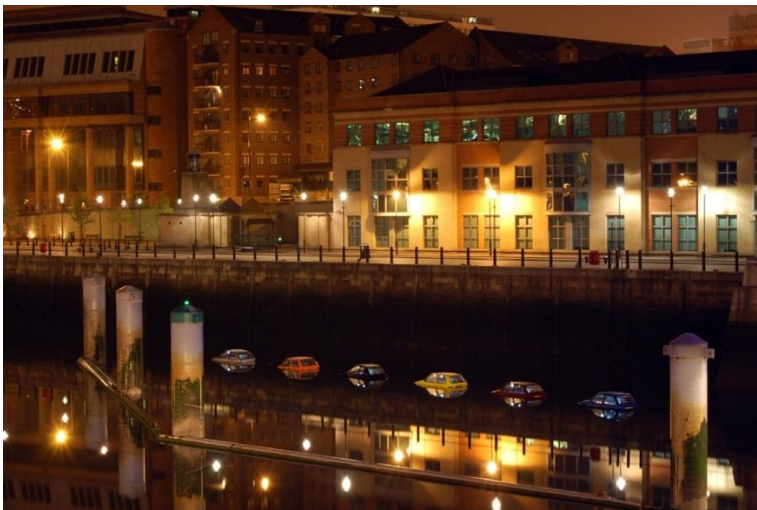


Figure 3.11. *Come Hell or High Water*, Newcastle, England, 2006

The previous installations invite prolonged looking because they are ambiguous and open to several interpretations. Neurological studies have shown that the brain needs time to decode complex visual messages because micro-consciousnesses within it work at different speeds. For example, we see color before we see motion or site or

context.²⁶ Pinsky utilizes color as a catalyst to draw and hold the viewer's attention while they puzzle out all the possible implications of the scene. One might first be attracted to the novelty of these dramatic and colorful arrangements, then ask why the objects are underwater, then think about how they are made and consumed, and finally how they add to world pollution.

Color and light installations can challenge our confidence about seeing and knowing the world, especially when used in unusual contexts.²⁷ Pinsky's *Plunge* (2012) uses low energy blue LED lights to encircle three iconic London monuments. (figs. 3.12, 3.13, 3.14)



Figure 3.12. *Plunge*, one of three locations in London, 2012

²⁶ Zeki, *Inner Vision*, "Art and the Brain," and "The Neurology of Ambiguity."

²⁷ Cynthia A. Freeland, "A New Question about Color," *Journal of Aesthetics & Art Criticism* 75 (3) (2017): 231–48.



Figures 3.13 and 3.14. *Plunge*, two of three locations in London, 2012

At night, the monoliths become sites of beauty and stop people in their tracks. But when the subject matter becomes known, it turns into an experience of the terrible sublime. The blue lines actually indicate the projected height of sea level in London one thousand years on. That date is far in the future but the lines stand as a marker of catastrophe. Yet, the markers are high enough to give people hope that there is enough time to halt climate change. *Plunge* uses a visual device to communicate a threat that is presently invisible. Its title is ironic. One normally thinks of energetically plunging into refreshing water but here, humankind and its monuments would not willingly be plunged into the watery abyss.

Plunge is open to another layer of interpretation connected with our human induced environmental crisis. Pinsky chose monuments to military leaders and urban development²⁸ erected in the age of British imperialism and industrial advancement. The exploitation of natural resources under that regime, and its contribution to anthropogenic climate change, are mostly ignored by passersby. These monuments will

²⁸ The Duke of York column sits on Regent Street (erected 1832-34); the Lord Nelson column at Trafalgar Square (erected 1840-43); and the Seven Dials monolith/sundial on Monument Green, in Weybridge (1694-1773, replica 1989).

be submerged under water, doomed by the present culture's patterns of consumption and overseas exploitation. By making people look at the monuments afresh through color and light, Pinsky is enabling new conversations and cultural critique.

One additional color and light installation by Pinsky required human participation, giving it a salience beyond superficial appeal. (figs 3.15, 3.16)



Figures 3.15 and 3.16. *Monometer*, Kortrijk, Belgium, 2009

In *Monometer* (2009), colored light is projected onto Belgium's four highest wind turbines, at the site of an all-night arts festival in Kortrijk. The colored rings served as energy meters, rising and falling as the hours passed. The rings marked energy and

water consumption, and the production of noise and waste. The art is a reflection of everything around it. The active aspect of the installation, its openness to the surrounding environment, the mutual dependence of humans and the turbines to make it effective, and its transcendence of rigid art categories and their forms, link it to Morton's conception of ecological art—"Ecological art, and the ecological-ness of all art, isn't just about something (trees, mountains, animals, pollution, and so forth). Ecological art is something, or maybe it does something."²⁹ Indeed, *Monometer* revealed the ecological footprint of a specific event, while appealing to the senses. Art became part of the life of the festival as guests watched their own energy output. The abstract idea of energy consumption became visible and tangible.

All of these installations relate to *Pollution Pods* as reflections of Pinsky's political will to change energy policies, his activism around climate change, and his use of manipulated aesthetics to cognitive ends. The city and its architectural framework provide the impetus and literal backdrop for these earlier works, whereas *Pollution Pods* is the architecture itself. All Pinsky's works provide a rupture, or a change of expectations about environments through their ambiguity, drama, and catastrophic scenarios. At the same time, they display a pleasing arrangement of ordered spaces, stimulating color contrasts, and spotlight effects. *Pollution Pods* is his first work about climate change that literally immerses the visitor in an enclosed space which captures a foreign atmosphere. Whereas the other installations aim to deliver a cognitive understanding of the issues, *Pollution Pods* aims to impart environmental consciousness through the body and emotions.

²⁹ Timothy Morton, *The Ecological Thought* (Cambridge, MA: Harvard University Press, 2010), 11.

Historical Precedents of Encapsulated Atmosphere

One palpable way to get the public to engage with climate change issues is to physically immerse them in it. By enclosing five disparate microclimates, *Pollution Pods* changes our perceptions of what nature (air, atmosphere) is, including its transcorporeal properties, and what our bodies are willing to tolerate. As architecture scholar Daniel Barber suggests, “The making of environments is integral to the production of architectural space. From its construction of microclimates to its contribution to planetary ecologies, architecture not only shapes specific habitats, but also our relation to what is commonly perceived as nature.”³⁰

The idea of shaping specific habitats by importing or producing specific atmospheres for different ends, has a variety of precedents in Western culture. The steel and glass Palm House at the Royal Botanic Gardens at Kew (1844-48) (figs. 3.17, 3.18) was a successful architectural and engineering endeavor which aimed to preserve, display and study tropical trees and flora in a hothouse environment. In mid-nineteenth century England, the vogue for studying natural history resulted in numerous societies which promoted scientific and empirical investigations of nature. Exploration and specimen-gathering led to publications and new private and public collections. This stimulated a trend for suburban gardens and greenhouses, where rare varieties of trees, flowers, fruits, and shrubs were the pride of amateur horticulturalists.³¹ The transplantation of tropical trees and flora signaled the anthropocentric mentality that

³⁰ Daniel A. Barber, et al., “Architecture, Environment, History: Questions and Consequences,” *Architectural Theory Review* 22, no. 2 (2018), p. 262, <https://doi.org/10.1080/13264826.2018.1482725>

³¹ Ann Bermingham, *Landscape and Ideology: The English Rustic Tradition, 1740-1860* (Berkeley: University of California Press, 1986), 171.

viewed the uprooting of such for human enjoyment and learning as ethically acceptable. Palm House functioned as a material expression of this attitude as well as a monument to industrial innovation and scientific progressivism. On a purely sensorial level, it served as a welcome environmental antidote to the soot, filth, and noise of industrial London. It survives today as a haven for endangered species.



Figure 3.17. Palm House, Royal Gardens at Kew, 1844-48



Figure 3.18. Palm House, interior

Another iconic example of architecture embodying technology, progressivism, and optimism, created some ninety years later, is the geodesic dome of visionary architect Buckminster Fuller (1895-1983). The dome is just one example of Fuller's many multidisciplinary pursuits and creations dedicated to environmental sustainability. He envisioned our planet as "spaceship Earth," a self-sustaining, closed-loop system that functioned through the marriage of nature and technology. Such an ecosystem would rely on wind power and tides, an equal distribution of global natural resources, and more energy-efficient building materials and fuels. Fuller's environmentally conscious thinking, inventions, and designs of the early twentieth century had an impact on the American-counterculture Green movement of the 1960s–70s, including the *Whole Earth* catalogue, the notion of systems ecology, environmental activism, the rise of holism, renewable energy research, and global thinking.³²

Fuller executed, patented, and popularized the first geodesic domes in the United States in the late 1940s–early 1950s. (figs. 3.19, 3.20) Based on "synergetic geometry," his term for his lifelong exploration of nature's principles of design, the geodesic dome was the result of his revolutionary discoveries about balancing compression and tension forces in building.³³ These durable, relatively lightweight energy-efficient shelters were originally crafted from aluminum and fiberglass panels. Later iterations used glass, plastics, and high-tech materials. The lack of interior walls or supporting columns allowed for unobstructed energy flow. Fuller's adage of "doing more with less" was expressed in the simple exterior shell of metal frames and clear skins. The domes have

³² See Peder Anker, *From Bauhaus to Ecohouse: A History of Ecological Design* (Baton Rouge: Louisiana State University Press, 2010) and Andrew Kirk, *Counterculture Green: The Whole Earth Catalog and American Environmentalism* (Lawrence: The University of Kansas Press, 2007).

³³ See the Buckminster Fuller Institute website, <https://www.bfi.org/about-fuller/biography>

since been used in crisis scenarios, military projects, and as biospheres. Pinsky stated, “By directly quoting [Buckminster] Fuller’s iconic structure as its primary visual statement and spatial metaphor, *Pollution Pods* would conjoin art and technology, while questioning division and containment as a prime technique of Modernity.”³⁴ Fuller’s utopianism, as articulated through the geodesic dome, resonates with Pinsky’s Green agenda as well as his preference for architectural minimalism. Since 2000, Pinsky has worked with city planners in London, and is currently engaged with the King’s Cross development. One of his goals has been the redesign of cities to make them more energy-efficient. By making work spaces, services, and shops accessible by foot, he aims to eliminate the need for cars. He is “interested in public realms that encourage people to get together, [where they] don’t have to spend money in that space, not all franchised and sold out. Generous towards its citizens.”³⁵

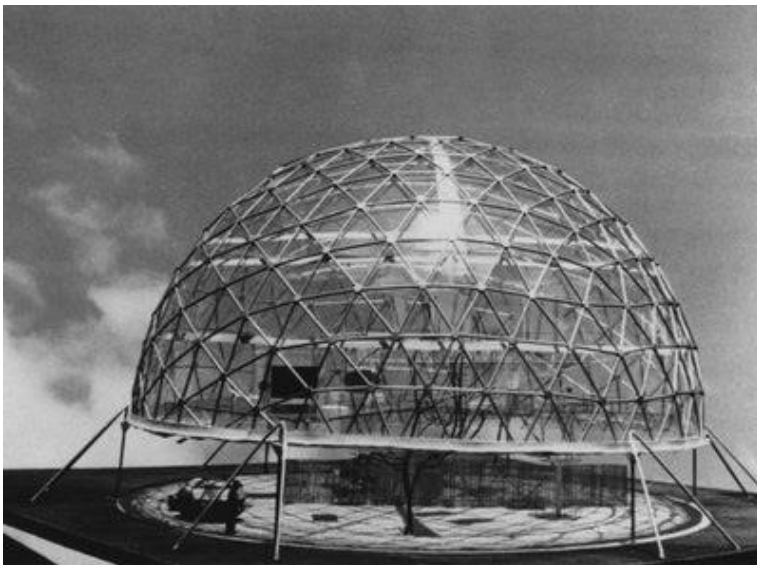


Figure 3.19. Buckminster Fuller, original model of Geodesic Dome House, 1952, unlocated. Photo: Keystone/Hulton Archive/Getty Images

³⁴ Pinsky and Sommer, *Pollution Pods*, 94.

³⁵ Pinsky, interview, 2019.



Figure 3.20. Buckminster Fuller, The Montreal Biosphere, formerly US Pavilion at the 1967 World Fair, Montreal, Canada

Fuller's prototype of a sustainable human habitat was the inspiration for many scientific and futuristic designs, including Biosphere 2 in the Arizona desert. (fig. 3.21) Built in 1987, the year before NASA scientist James Hansen testified before Congress on the dangers of climate change, Biosphere 2 was an attempt to salvage civilization through a merging of technology and ecology.³⁶ Within architecture inspired by Fuller and by Mayan, Babylonian, and Islamic forms, scientists replicated miniature ecosystems including a rainforest, a savannah, a desert, fresh and saltwater wetlands, and a coral reef in an ocean. Beneath the impressive exterior was a sealed world where scientists conducted sustainability experiments on humans, plants and animals. Unfortunately, the experiment was cancelled after two years when growing environmental risk outweighed the benefits. The oxygen in the air was usurped by carbon dioxide. The water became undrinkable. Crop growth was stunted. Animals

³⁶ Carl Zimmer, "The Lost History of One of the World's Strangest Science Experiments," *New York Times*, March 29, 2019, <https://www.nytimes.com/2019/03/29/sunday-review/biosphere-2-climate-change.html>

began to die. In all, the compromised atmosphere proved unsafe.³⁷ Now owned by the University of Arizona, Biosphere 2 continues as a site of research.



Figure 3.21. Biosphere 2, Oracle, Arizona, 1987-1991

Palm House and Biosphere 2 share some of *Pollution Pods*' architectural characteristics, and they also sequester displaced environments. But they are *Pods*' conceptual opposites. The earlier structures contain healthy, sustainable green specimens and ecosystems from around the world (though the means of their production speaks of colonization). They are scientific microcosms intended for prolonged study and pleasure. They stimulate the senses in a pleasurable way, communicating a sense of sanctuary (that is, until Biosphere failed). On the contrary, *Pods* first appears as pleasurable and safe, and then begins to communicate threat through the senses. Their unhealthy environments are not sustainable for humans or

³⁷ Zimmer, *The Lost History*, 2019. For a personal account of what transpired inside Biosphere by one of the biospherians see Mark Nelson, "Biosphere 2: What Really Happened," *Dartmouth Alumni Magazine* (May–June 2018), <https://dartmouthalumnimagazine.com/articles/biosphere-2-what-really-happened>

nonhumans. They are meant to be ephemeral warnings of real and present danger in the biosphere at large.

Pollution Pods is a simple iteration of Fuller's dome that evokes futuristic technology and clean spaces, but with layers of irony that result in quite different ends. One could argue that *Pollution Pods* brings to light the long-term environmental and economic failures of the industrial technology that enabled the construction of the first geodesic domes. They provide no shade, so they heat up drastically. Single-glazed panes of glass and plastic sheeting do not insure against temperature extremes, nor do they meet today's building codes. As a fully sealed system, the dome must rely on mechanical heating and cooling, which is generated by fossil fuels. The sourcing, transportation, and industrial production of the dome components cause disruption to the earth and add carbon emissions to the air (although this is partially mitigated by Pinsky's use of reclaimed timber). Material, labor, and construction costs today are more than eleven times higher than they were in 1950, after accounting for inflation.³⁸ Cost, access, and strict zoning requirements make permanent geodesic domes out of reach for the common person. In all, the relationship of the dome today to human need and comfort, and its relationship to nature is a tenuous one.

Another utopian vision of an architecture which could provide a healthy, eco-friendly lifestyle with minimal means was the *Clean Air Pod* (1970), by the art practice known as Ant Farm. (fig. 3.22)

³⁸ Ed Zarenski, <https://edzarenski.com/2016/10/24/construction-inflation-index-tables-e08-19/> and *Engineering News Report* https://www.enr.com/economics/historical_indices/construction_cost_annual_average



Figure 3.22. *Clean Air Pod*, Ant Farm, 1970, UC Berkeley

Ant Farm, established in 1968 by Chip Lord, Doug Michels, and Curtis Schreier, was born out of the San Francisco counterculture movement which promoted and accepted alternative lifestyles. New digital tools, technology, and a spirit of openness enabled a “communal ethos that supported a web of affinities linking counterculture architects, planners, ecological activists, and educational reformers.”³⁹ Ant Farm’s experimental art and actions critiqued norms of consumerism, government policies, corporate influence, growing levels of air pollution, and the pervasiveness of mass media. One of their attempts to bring environmental awareness to the public was a staging of an “air emergency” on the UC Berkeley campus on the first Earth Day in 1970. They used loudspeakers to direct passersby into the *Clean Air Pod*, an inflatable, transparent “room” in the shape of a giant pillow. Once inside, visitors would be

³⁹ Eli Alpern, “Ant Farm 1968-1978 Historical Essay,” *Found San Francisco*, https://www.foundsf.org/index.php?title=Ant_Farm, accessed April 2, 2021, quoting from Constance Lewallen and Steve Seid, *Ant Farm 1968-1978* (Oakland: University of California Press, 2004).

protected from unhealthy air and realize the pods' potential as a habitat. To intensify the drama of the situation, members of the group wore gas masks and lab coats. By 1970, the gas mask was an iconic symbol of poisonous air and environmental risk. Like the inflatable, it offered a quick-fix solution to what was perceived as an immediate, local problem.⁴⁰ Like previous utopian concepts, there were inherent problems. The plastic skin of the inflatable and the gas-powered fans weren't eco-friendly or sustainable.

Clean Air Pod anticipated *Pollution Pods* in its commentary on poor air quality, using street theater to simulate an environmental crisis, and its ephemerality. But Pinsky inverts the proposition by substituting dirty air instead of clean, creating a dystopia rather than a haven. By compelling the visitor to travel through the bubbles of several polluted countries, he establishes air pollution as a global problem rather than a local one. Whereas the Berkeley Earth Day performance was a one-time event that purported to offer an easy fix to individuals in "imminent danger," *Pollution Pods* manifests the omnipresence of air pollution which requires orchestrated, sustained, long-term solutions toward its elimination. As it moves from location to location, it subjects visitors, if only for a few minutes, to the uncomfortable and unhealthy realities of life in certain polluted cities. This forces a recognition that environmental injustices are borne mostly by the Global South.

⁴⁰ For an historical account and deeper analysis of the iconic images of the environmental movement in America see Finis Dunaway, *Seeing Green: The Use and Abuse of American Environmental Images* (Chicago: University of Chicago, 2015).

Hyperobjects, Atmosphere, and Actants

Any art concerned with air pollution, sea level rise, energy consumption, and post-consumer trash can be linked with the concept of the *hyperobject* as defined by Morton (as discussed in Chapters 1 and 2). Hyperobjects are so enormous that we cannot apprehend their total dimensions, though we can experience some of their local tangible manifestations. Some features of hyperobjects may be visible, others not. Air pollution is a hyperobject which in some manifestations can be visible, like a thick layer of smog over cities. (figs 3.23, 3.24)



Figures 3.23 and 3.24. Top: Cairo, Bottom: Los Angeles

Other aspects are invisible, like the nearly 420 parts per million of carbon dioxide in the air which traps heat from the sun, raising global temperatures.⁴¹ Air pollution has different chemical components in different regions. These regional variations and their corresponding health implications are not necessarily known in many parts of the world. Given its connection to climate change, this lack of knowledge, and the inability to see air pollution, are some of the factors that stifle cultural change and progressive climate policy.⁴²

Pollution Pods effectively communicates the diffuse/dispersed nature of the hyperobject through a contained form that confronts us viscerally. In the *Pods* there is no escape from the air or its implications. Atmosphere functions here as a hyperobject; or we could say conversely that the hyperobject appears as atmosphere. It takes the form of misty, clammy, foul air in isolated pods. (fig. 3.25)



Figure 3.25. Interior of *Pollution Pods*, Melbourne installation, August 2019

⁴¹ "Carbon dioxide peaks near 420 parts per million at Mauna Loa observatory," NOAA Research News, June 7, 2021, <https://research.noaa.gov/article/ArtMID/587/ArticleID/2764/Coronavirus-response-barely-slows-rising-carbon-dioxide>

⁴² Artist Amy Balkin's international project, *Public Smog* (2004–) gave visibility and conceptual weight to the idea of temporarily achieving clean air through the local purchase and withholding of carbon offsets. She also attempted to add the earth's atmosphere to UNESCO's World Heritage List. See <http://tomorrowmorning.net/publicsmog>.

Hyperobjects such as air pollution traverse distances, but how are those distances measured and accessed? They are usually defined by maps, or political and geographical borders. In philosopher Bruno Latour's actor-network theory of far/close, we can get rid of the "tyranny of distance" imposed by geographers and cartographers, by bringing distant elements close to us. "The notion of network helps us to lift the tyranny of geographers in defining space and offers us a notion which is neither social nor 'real' space, but associations."⁴³ The associative quality of atmospheric air, which moves across borders and time, is a key feature of *Pollution Pods*. Pinsky abolishes the tyranny of distance, or the notion of a segmented world, by importing the air of different cities to one site in order to meld embodied experiences with macro environmental issues.

Air becomes the signature component of the installation as it moves around the visitor's space, creating interactive energy and discourse. Air is the *actant*, a term used by Latour and Jane Bennett to define nonhuman entities that have agency towards other entities. For Latour "anything that does modify a state of affairs by making a difference is an actor—or, if it has no figuration, yet, an actant."⁴⁴ According to Bennett, actants can do something, make a difference, or produce effects.⁴⁵ The actant in the pods stimulates our senses of smell, taste, and thermoception and produces a synesthetic environment. The actant also stimulates our somatic markers, or feelings in

⁴³ Latour, "On Actor Network Theory: A few clarifications ½," Centre for Social Theory and Technology (CSTT), Keele University, UK
<https://www.nettime.org/Lists-Archives/nettime-l-9801/msg00019.html>

⁴⁴ Bruno Latour, *Reassembling the Social: An Introduction to Actor-Network-Theory* (Oxford: Oxford University Press, 2005): 71.

⁴⁵ Jane Bennett, *Vibrant Matter: A Political Ecology of Things* (Durham, NC: Duke University Press, 2010), viii.

the body associated with emotions. The synesthesia in *Pollution Pods* creates a powerful dialogue with the body that helps make meaning.

The Sensorium as Knowledge

A twenty-first century trend towards accepting the sensorium as knowledge, or put another way, privileging the senses of touch, taste, smell, and vision in acquiring knowledge, has found validation across the social sciences and humanities. A mixed body of work on perception and the senses by anthropologist Sarah Pink,⁴⁶ film and aesthetics scholar Luis Rocha Antunes,⁴⁷ and architect Anastasia Karandinou⁴⁸ adds credence to Pinsky's tactic of involving the whole body in space as a way of personally grasping external phenomena.

The senses can be acutely stimulated by atmosphere. Often, atmosphere is intangible, ephemeral, and hard to articulate, yet it exists in every space we inhabit.

Karandinou asserts:

Atmosphere can be described as what always remains a background to living, and when faced in a straight way disappears. Non-visual sensations, like sound, smell, textures, temperature, are also elusive invisible elements of space, difficult to represent, since representation is so often based upon the visual.⁴⁹

⁴⁶ Sarah Pink, *Doing Sensory Ethnography* (London: Sage Publications, 2009).

⁴⁷ Luis Rocha Antunes, *The Multisensory Film Experience: A Cognitive Model of Experiential Film Aesthetics* (Bristol, UK: Intellect Books, 2016).

⁴⁸ Anastasia Karandinou, *No Matter: Theories and Practices of the Ephemeral in Architecture*, Ashgate Studies in Architecture (Burlington: Routledge, 2013).

⁴⁹ Karandinou, *No Matter*, 1.

Pinsky, whose training includes architectural theory and practice, has purposely foregrounded atmosphere in his “architecture” through the invisible sensorium. By recreating the distinct air quality of several cities, *Pollution Pods* provides a unique phenomenological experience; the visitor becomes hyper-self-aware in this atmosphere in this moment in time. Space and place can feel safe, secure, pleasurable and pleasant or uncomfortable, risky, threatening or dangerous through a complex combination of elements.⁵⁰ The atmosphere has a strong impact on the visitor’s ability to understand what pollution does to the body, and by extension, to whole communities of at-risk people. This visceral agent may prove more effective to certain people than the reading of charts, diagrams, and statistics, though Pinsky has included a small display of scientific data in each pod.

Once the senses are activated, they provide additional forms of knowledge about places, events, people, even hyperobjects. A new methodology in anthropology called *sensory ethnography* privileges sensory experience as a way of gathering essential information and reactions. Pink has noted the connections between sensory ethnography and installation art practices in engaging or gathering people’s responses. “Perhaps the clearest example is in forms of practice in each discipline that use walking as a method of researching”⁵¹ (e.g., artist and researcher Sissel Tolaas, who collects and displays odors from different cities; social anthropologist Katrín Lund, who studies walking and narrative in the perception of landscape; and multidisciplinary artist Jenny Marketou, who imbricates walking, smells and fashion as a form of political

⁵⁰ Deborah Lupton summarizes the scholarship on affective atmospheres which draw on phenomenological perspectives in “How Does Health Feel? Towards Research on the Affective Atmospheres of Digital Health,” *Digital Health* (January 2017). <https://doi.org/10.1177/2055207617701276>

⁵¹ Pink, *Doing Sensory Ethnography*, 20-21.

engagement). All three of these practices relate to *Pollution Pods*. Though a formal sensory ethnography study was not done, documentation of visitor sensory reactions is available through journalist interviews, Twitter posts, visitor comment books and YouTube videos.⁵² At the *Pollution Pods* venue in Dorset, UK, visitors mentioned “nose and lung opening,” “recognizing New Delhi and London and Beijing on a cold day,” “pollution that we now understand for real is poisoning our cities all over the world,” and “thought provoking—good to feel the changes in atmosphere, temperature and the visual effect of the smog.” (Fig. 3.26)



Figure 3.26. *Pollution Pods*, Trondheim, Norway, 2017

In *Pollution Pods*, the sense of smell is the foremost indicator of airborne environmental risk. From an evolutionary standpoint, smell helped ensure our survival as it directed us towards and away from healthful or harmful entities. Scientific evidence

⁵² See note 1.

shows that the olfactory bulb connects directly to the limbic system of the brain, the area that regulates emotion. This is why an odor may trigger nearly instantaneous feelings of fear or desire before one even becomes fully aware of what one is smelling.⁵³ Taste is entwined with smell because the nose and throat share the same airway, so it too can convey meaning and emotion, as in the madeleine of Proust. Smell flows through our bodies as we breathe; it is a trans-corporeal sort of medium and therefore defies binaries such as nature/culture, in/out, here/there. When olfactory art is deployed in art installations or exhibits, it merges subject and visitor, actants and environment.

There is also a cultural significance attached to certain kinds of odors. We associate smell with food, events, places, and nature. We can anticipate a situation through smell, or remember a scenario from the past. Smell is a place-making element in architecture. It not only defines places but also distances between the smell's source (whether object, human, event, etc.) and the ones who perceive it. The sense of smell gives direction, depth, and distance, and expands over space and time.⁵⁴ Curator Jim Drobnick, an authority in the field of smell and contemporary culture, has coined the term *toposmia*, a compound of the Greek words for "place" and "smell," to describe a field of inquiry concerned with "the spatial location of odours and their relation to particular notions of place."⁵⁵

Pinsky uses *toposmia* and the cultural affinities of smell in *Pollution Pods*, though he is certainly not the first artist to do so. "Olfactory art" can be traced back to

⁵³ Carl Sherman, "The Senses: Smell and Taste," Dana Foundation website, Aug.12, 2019 <https://www.dana.org/article/the-senses-smell-and-taste/>

⁵⁴ Anna Barbara and Anthony Perliss. *Invisible Architecture : Experiencing Places through the Sense of Smell* (Milano: Skira, 2006) as paraphrased in Karandinou, *No Matter*, 27-28.

⁵⁵ Hsuan L. Hsu, "Olfactory Art, Transcorporeality, and the Museum Environment." *Resilience: A Journal of the Environmental Humanities* 4, No. 1 (Winter 2016): 9

Duchamp's manufactured coffee aroma evoking the smell of Brazil in the 1938 Surrealist exhibition in Paris. Less pleasing smells, even pungent and nauseating ones, were part of avant-garde practices in the following decades. Joseph Beuys used decaying organic materials to evoke ideas of death, primitivism, and ecology in *Fat Chair* (1964) and *I Like America and It Likes Me* (1974). Edward Kienholz used urine, cigarettes, beer, and fatty food to suggest his local bar in *The Beanery* (1965); Judy Chicago used blood in *Menstruation Bathroom* (1972). In the twenty-first century, artists began evoking the smell of cities with the aid of master perfumers and odor specialists. Two cases in point are Brian Goeltzenleuchter's *Sillage* (Santa Monica Museum, 2014), where sprays of scent replicated various Los Angeles neighborhoods, and Sissel Tolaas's exhibition for the National Gallery of Victoria Triennial (2017), where she created a "smell landscape" of Melbourne. Tolaas has literally captured the smells of over fifty cities; they are preserved in her Berlin lab. Belgian artist Peter de Cupere's *Smoke Cloud* (2014) warrants the closest comparison with *Pollution Pods* because it employs both visual and olfactory elements, and requires the visitor to move into an immersive atmosphere. (fig. 3.27) The gallery participant ascends a ladder into a fluffy evocation of a cloud, then smells the pollution.



Figure 3.27. Peter de Cupere, *Smoke Cloud*, 2014

Pinsky goes beyond de Cupere and the others by using smell as a signifier of a global threat. As sensory studies scholar Hsuan Hsu notes, “air can be a medium of toxicity as well as a medium of sensation.”⁵⁶ By duplicating the odor of five distinct cities, Pinsky generated a comparative range of toxicity and comfort levels. (fig. 28) The previous examples of olfactory art are place and space-specific, intertwined with memory, or refer to the functions of the body. *Pollution Pods* is not meant to evoke personal recollection, nor does it aim for novel excitements, nor does it produce scent for scent’s sake. Rather, it provides scent as a means of enviro-social comparison and a sensory wakeup call to global environmental inequities.

⁵⁶ Hsu, *Olfactory Art*, 7.



Figure 3.28. Interior of New Delhi *Pollution Pod*

Another bodily mechanism that plays an affective role in *Pollution Pods* is thermoception, the sensation and perception of temperature. Little has been written about thermoception in installation art, although ironically it has been addressed in recent film and television studies.⁵⁷ I propose that changes in temperature and humidity, along with smell, taste, and vision make *Pollution Pods* extremely rich on an experiential level. These changes have the ability to affect motor responses such as recoiling from heat and humidity (New Delhi) or conversely, relaxing in a cool dry climate (Norway). Pinsky explained his strategy: “In some of the domes the visibility is lower like New Delhi and Beijing so you’ve got a haze, so there’s something visible. It could be cold and clammy or it could be hot and dry. There’s something to feel. Those things hit you in the face as well as the pollutants.”⁵⁸ Pinsky creates a structure where the visitor

⁵⁷ Luis Rocha Antunes, *The Multisensory Film Experience : A Cognitive Model of Experiential Film Aesthetics*. Bristol, UK: Intellect Books, 2016 and Antunes, “Slow TV: The Experiential and Multisensory Documentary.” In *Cognitive Theory and Documentary Film*, edited by Catalin Brylla and Mette Kramer (New York: Palgrave Macmillan US, 2018), 205-221.

⁵⁸ Pinsky, interview, 2019.

probes the atmosphere of a city through physical sensations. Unlike watching a documentary about air pollution where the spectator is passive and relies on sight and sound, *Pollution Pods*' immersive conditions elicit somatic markers. Some visitors experience shortness of breath, irritated eyes and sweating; others feel claustrophobic and run for fresher air.⁵⁹ Somatic markers cause a fear response, an impulse to flee, and other strong emotions, discussed later in the chapter.

As potent as affect is in producing sensory-based knowledge, some see limitations to its credibility. Erika Doss has noted that, "Admittedly, focusing on feelings and emotions—the senses—as sites of critical inquiry raises questions for those accustomed to the clarity and coherence of seemingly more objective and conceptual bodies of evidence."⁶⁰ Perhaps to counter that sort of skepticism, Pinsky has included different forms scientific data in each venue. All pods contain screens which record the real-time air quality index in each city. (fig. 3.29) Some venues have included outdoor flags that change color based on the amount of ultraviolet light they receive, demonstrating the heightened risk from the hole in the ozone layer. Other sites offer lists of facts regarding CO2 emissions and practical actions that can be taken to reduce them.

⁵⁹ See notes 1 and 2.

⁶⁰ Doss, *Affect*, 10.



Figure 3.29. Interior, *Pollution Pods*, Trondheim, Norway, 2017

Public Response, Critical Reception, Psychological Effects

The first exhibition of *Pods* in Trondheim, Norway generated so much interest that Pinsky has been invited to install them at conferences around the world.⁶¹ Venues have ranged from the courtyard of Somerset House in London (April 2018), the COP25 UN climate conference in Madrid (December 2019), the Science Gallery Melbourne (August–September 2019), to the TED2019 in Vancouver, BC. The encapsulated atmospheres and the affective responses they created resulted in new epistemologies of climate change, and sparked real-time conversations about air pollution. Some of the venues had a direct link to climate politics. When *Pollution Pods* was exhibited at the UN Climate Summit in September 2019, it was visited by

⁶¹ Pollution Pods debuted at STARMUS, Trondheim, Norway in 2017. It then travelled to Somerset House, London, UK; World Health Organisation's First Global Conference on Air Pollution, Place des Nations, Geneva, Switzerland; Klimahaus, Bremerhaven, Germany; TED Annual Conference, Vancouver, Canada; Clean Air Week, Media City UK, Greater Manchester UK; B-Side, Portland, UK; Melbourne Science Gallery, Australia; UN Climate Change Summit, UN Headquarters, New York City, USA; Nuit Blanche, Brownsea Island, Activate, UK; COP25 Madrid. The tour was interrupted by the global pandemic of 2020-21, but resumed for the COP26 in Glasgow October 31-November 12, 2021.

environment ministers, heads of state, NGOs, and social media magnates Mark Zuckerberg and Sergey Brin among others.⁶² (figs. 3.30, 3.31, 3.32)



Figure 3.30. *Pollution Pods*, UN Climate Summit, NYC, September 2019



Figures 3.31 and 3.32. International WHO visitors (left) and Greta Thunberg (right) inside *Pollution Pods*, New York City, September 2019

One noteworthy visitor was Greta Thunberg, the renowned teenage activist who has become the international face of climate change advocacy.⁶³ A compelling video of her experience inside *Pollution Pods* illuminates the artwork's affective component, the link

⁶² Pinsky interview with author, 2019.

⁶³ Among Thunberg's international awards are TIME person of the year 2019, Nobel Peace Prize nomination, 2019, the journal *Nature's* 10, 2019, and the Rachel Carson Prize, 2019.

to education about global health, and its potential to catalyze climate politics.⁶⁴

Thunberg is accompanied by Dr. Maria Neira of the World Health Organization, who explains the links between respiratory diseases and pollution.

It's not just the fact that it is very unpleasant...but the particulate matter that is in the air gets into our lungs. It causes already a lot of damage. Now we have more evidence proving that it's affecting our cognitive development. So can you imagine that as a society we are getting less intelligent?

A few minutes after Thunberg says that she finds it hard to breathe and that she has a headache, she has the realization that “If we see that clear connection, then it makes it much easier for us to connect the dots and to want to stop this problem. The climate crisis and air pollution—it’s just so connected. And we cannot solve one without solving the other.”

Pollution Pods’ sequence of environments reflects the fact that although the cities of the Global North like London (or Athens, or Los Angeles) have poor air quality on many days of the year, air pollution in cities of the Global South like New Delhi and Beijing is many times worse owing to coal burning factories, vehicles with lower emission standards, open waste burning, and massive industrial output.⁶⁵ *Pollution Pods* gives “shape” to formless and obscure environmental dangers that are not immediately apparent to the human eye. Those attritional dangers build over time and

⁶⁴ “Greta Thunberg Experiences ‘Pollution Pods’ at UN Youth Climate Summit,” Sept. 26, 2019 https://www.youtube.com/watch?v=i_ZhZhh947g

⁶⁵ The cities of the global north are subject to toxic emissions of ammonia and methane from nearby agriculture and livestock.

overwhelmingly affect the poor, oppressed and disenfranchised. This growing inequity is what literature scholar Rob Nixon calls “slow violence.”⁶⁶ Cities like New Delhi and Beijing are representative of populations whose infrastructure and industry are geared to serving markets in wealthier countries. Though not shown in the *Pods*, injustices abound in other communities of Asia, Africa, and South America who supply raw resources and labor to the Global North, but don’t derive economic or environmental benefits. Visitors to *Pollution Pods* hail from regions with diverse (unequal) economies, and with differing proximities to sea level, air and water quality, societal norms, environmental education, and government commitment to progressive climate policy. *Pods* offers them a chance to mingle and converse about these issues, a bottom-up response to toxic air. Naturally, responses will differ according to what the visitor is accustomed to. Pinsky describes one scenario.

When people enter a pod together (up to ten people) and they come to New Delhi, it’s such a shock for them. Instantly they start talking together—my God, is it really like this? And the conversation just ignites in these different environments... it’s quite a big work but the advantage is that you get these group communal experiences as well as individual, but you can share it. That process leads to an engaged experience.⁶⁷

⁶⁶ Rob Nixon, *Slow Violence and the Environmentalism of the Poor* (Cambridge, MA: Harvard University Press, 2011).

⁶⁷ Pinsky interview with author, 2019.

The group he mentions found New Delhi unbearable, but some visitors had completely different experiences. For example, people who are used to high levels of pollution told Pinsky that “it’s [New Delhi] really not that bad.” On the opposite end of the spectrum, Pinsky recalled people from the west of Ireland who “just physically can’t get through it.”⁶⁸

The conversations extended beyond the *Pods*. The installation generated thousands of Twitter posts from around the world, particularly in the United Kingdom, US, Norway, and India.⁶⁹ In the sampling read by the author, visitors first communicated what they did and felt in the *Pods*, then added extracts of scientific data, upcoming climate conferences, and the logos of non-profit health or sustainability organizations dedicated to cleaner air initiatives. These posts indicate that *Pods* worked on an affective and cognitive level. Social media, today’s popular equivalent of the Habermasian public sphere, is a potent platform to record affective experiences, climate change facts, and present and future actions. *Pods* also reached thousands through videos posted on the Internet, from sources as diverse as the BBC, the World Health Organization, Science Gallery Melbourne, Radio Bremen, Times of Oman, and UN Climate Change. Additionally, there have been hundreds of articles and reviews in print and digital magazines.⁷⁰ *Pollution Pods*’ relevance and impact achieved the rank of no. 71 in Artnet’s article “The 100 Works of Art That Defined the Decade” (December 30, 2019). Critic Ben Davis commented, “It [Pods] takes the strengths of “immersive” installation art and puts them to agitational ends.”

⁶⁸ See note 65.

⁶⁹ Data on audience, sentiment, demographics, themes, and volume obtained February 2021 from Twitter by the author.

⁷⁰ See note 1.

Pollution Pods' psychological effects have been documented in a transdisciplinary study by some of the members of the CLIMART team.⁷¹ The conclusion begins, "Our work points to the value of large-scale immersive art for communicating the perceptually linked concerns about air pollution and climate change."⁷² This questionnaire study, along with another qualitative one,⁷³ found that participants felt that experiencing the conditions in the pods immersively was much more powerful than reading information about it. The immersive experience of the *Pods* was designed to target a variety of emotions. Visitors were found to have experienced quite a range of emotions—sadness, helplessness, anger, guilt, shame, awe, inspiration, surprise, happiness, and pride. Those who experienced happiness and pride believed that the pods which represented their home cities (Trondheim or London) had better, healthier environments than the other pods. Both positive and negative emotions were associated with an individual's intention to take environmental action and change their behaviors. Not only emotions but cognition played a role in creating intention. The visitors reported that art provoked cognition of the following—one's personal place in the environmental system; social connections; physical effects that occur over time; and connection between one's actions and environmental effects. The analysis found that intentions to act were strong, and slightly increased from before participation. The experience increased belief in the relevance of environmental problems for daily life. This belief is an important factor in counteracting the psychology of climate change

⁷¹ L. K. Sommer et al., "Pollution Pods: The merging of art and psychology to engage the public in climate change," *Global Environmental Change* 59, no. 101992 (November 2019).

⁷² Sommer, "Pollution Pods," 11.

⁷³ Roosen, Liselotte J. and Christian Klöckner, "Art and Documentaries in Climate Communication: Experiencing the Reality of Climate Change and Leading the Way to Change." *Art Research International* 5, no. 2 (2020): 524-552.

denial, which is still prevalent in many communities around the world.⁷⁴ What the study could not ascertain is whether the participants acted upon their intentions—a common limitation of such studies.

Conclusion

Pollution Pods is a form of ecoaesthetics that draws people in through appealing artistic means, then immerses them in real-time human-induced environmental problems. It creates sensory conditions that stimulate somatic markers and emotions, all of which play a definitive role in meaning making. Further, the emotions travel the neural highway to the pre-frontal cortex, which regulates behavioral changes and decision making. *Pods* changes perceptions about “nature out there” because as visitors breathe the polluted air, they become inseparable from nature. They begin to think about the fossil-fueled homes and cars, and the industries that produce the products they use daily. The strength of *Pollution Pods* lies in its distinct atmospheric contrasts from cell to cell, which causes a physical and cognitive reckoning of environmental injustices and the socioeconomic conditions that produce them.

The installation functions as a great equalizer of diverse groups as they collectively move through compromised spaces. The increasingly uncomfortable cells force new sensory and cognitive understandings of pollutions’ global implications. The experience fosters communal conversations in the pods themselves, and later in social,

⁷⁴ See Kari Marie Norgaard, *Living in Denial: Climate Change, Emotions, and Everyday Life* (Cambridge, MA: MIT Press, 2011) and Sally Weintrobe (ed.), *Engaging with Climate Change: Psychoanalytic and Interdisciplinary Perspectives* (London: Routledge, 2013).

digital, and print media. Perhaps most importantly, high-ranking health, government, and industry leaders visited the *Pods*. Pinsky's hope is that they can effect policy change around air pollution, which will impact climate change.

Pollution Pods literally confronts the hyperobject in a form that is inescapable. It challenges notions and perceptions about environmental health by showing how bodies are affected by air pollution. It connects air pollution to global inequities. It makes the visitor empathetic to environmental injustice.

The power and effectiveness of *Pollution Pods* as an exhibition cannot be denied. The public, journalists, and critics alike were deeply affected by their experience inside the pods. As the work travels to venues worldwide, environmentalists and artists will be asking if all this acclaim and recognition will engender concrete environmental action.

Chapter 4

Justin Brice: Ironies in Medium and Message

On the cover of the book *Art, Theory and Practice in the Anthropocene* (2019) there is a photograph of a man's arm with a tattoo that runs from his wrist to his shoulder. (fig. 4.1) It appears to be a simple ascending jagged line. Behind the arm is a densely articulated white surface.

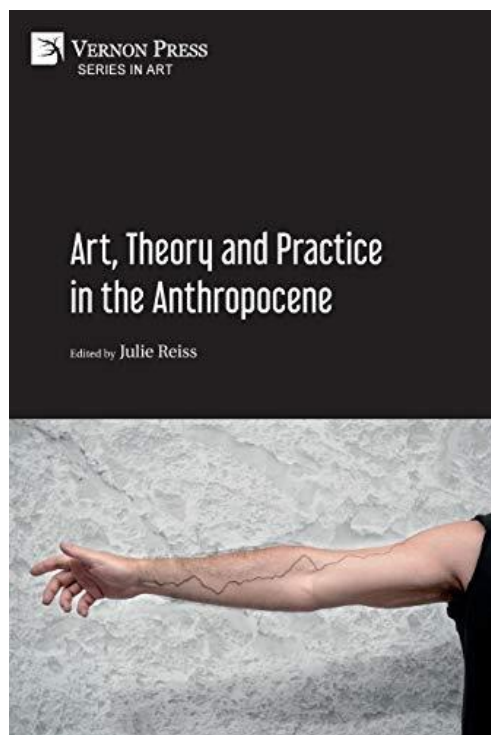


Fig. 4.1. Cover image: Justin Brice Guariglia, *GISTEMP Index 1880-2016 —Until Deceased*. Black carbon tattoo pigment, skin. Courtesy of the artist. Copyright © 2019 Vernon Press on behalf of the author.

As author Julie Reiss has noted in her introduction to this book, the image is reminiscent of the hand of God giving life to Adam in Michelangelo's Sistine Chapel

fresco.¹ Yet the image must surely relate to the contemporary issues introduced in the book's title. Indeed, as she goes on to explain, the arm belongs to artist Justin Brice, and the tattoo line tracks the global rise in temperature between 1880 and 2016, as recorded by NASA's GISTEMP index. The off-white background is a detail of glacial ice from one of his photo-based prints. The photograph metaphorically encapsulates the book's title by merging ontological layers: a work of art depicting Arctic ice, a subject imbricated within the *Anthropocene* discourse; the artist who made the work; and a tattoo on the artist's arm, fusing the scientific tables of weather data and the "narrative" knowledge of the body. The tattoo represents what aesthetics scholar Benjamin Morgan would designate an "aesthetics of data" which merges bodily experience with quantification, numbers, and data.² Morgan was referring to nineteenth-century Arctic voyage narratives, but the analogy can be extended to Brice's contemporary body art which can be "read."

Brice's body has been the carrier of climate breakdown information in a number of ways. His senses were assaulted by the effects of industrialization and urbanization while he worked as a photojournalist in Asia during the 1990s for *National Geographic*, *Time*, and *Smithsonian*. He remembers witnessing what he called the "Great Asian Acceleration," which included deforestation in Indonesia, the collapse of animal stocks in Mongolia, and rivers polluted with rubbish across China. "In Beijing in the mid-1990s, you could walk down the street in the winter and within minutes your nose would run black from all of the particulate suspended in the air you breathed, all coming from the

¹ Julie H. Reiss, *Art, Theory and Practice in the Anthropocene* (Wilmington, DE: Vernon Press, 2019), v. All illustrations in this chapter are the work of Justin Brice unless otherwise noted.

² Benjamin Morgan, "After the Arctic Sublime," *New Literary History* 47, no. 1 (Winter 2016): 1–26.

coal that was being burned, to generate the power needed to fuel the economic revolution.”³ A decade later, wanting to bear witness to climate change, he began accompanying NASA flying missions over the Arctic glaciers (Operation Ice Bridge). The accumulation of embodied experiences convinced Brice to communicate the climate crisis as quickly as possible through any artistic means possible:

Working as an artist everything is fair game. The subject matter never changes. It's really just about the interpretation and the form. It's about creating something that is evocative, thoughtful and will spur people to think and to consider themselves on this planet.⁴

But viewers’ responses will differ greatly depending on the context of the art, their cultural exposure and preferences, and their familiarity with the issues. Therefore, his artistic choices range from complicated and ambiguous terrain such as photo-based abstract prints, to the ironic use of non-eco-friendly materials including the carbon black ink in his tattoo, to mass communication methods like text-embedded “paintings,” signage, and LED digital billboards.

Brice’s contributions to mapping and picturing the Anthropocene epoch, particularly Arctic ice melt, open-pit mining, and large-scale agriculture, have been recognized by cultural theorist Eva Horn and photography curator Tim Wride. Horn considers his landscapes, along with Maisel’s and Burtynsky’s, as *heterotopias*, a term

³ “Justin Brice Guariglia with Phong Bui,” *Brooklyn Rail* (April 2019), <https://brooklynrail.org/2019/04/art/Justin-Brice-Guariglia-with-Phong-Bui>.

⁴ Justin Brice, interview by the author, artist’s studio, Gowanus, New York, November 15, 2019.

Michel Foucault applies to spaces that are somehow “other”—marginalized, disturbing, contradictory, transforming, hidden from customary view, or reshaped in unnatural ways. At the same time, Horn places his work within the tradition of the sublime, though his gaze originates from the window of an airborne NASA plane. With the eye of a scientist, he focuses on the trails and markers of environmental destruction, leaving the traditional picturesque behind.⁵ Wride notes Brice’s transformation of photography into something abstract, complex, and sculptural like an object. He describes the artist’s invention of a new printing technology where the substrate is gesso-coated linen or polystyrene, and inks are substituted with polymers. His use of industrially mined and processed materials invests the images with another layer of meaning: “In a concrete and reciprocal sense, his images and the way they are given materiality have begun to mutually reinforce one another...to produce artifacts of incredible if not harmful durability, that will endure long after his subjects are gone.”⁶

These insightful analyses predate Brice’s recent outdoor signs and movie marquees, paradigms of his public-facing work. This chapter will augment Horn and Wride’s contributions by tethering the earlier mixed-media works to philosopher Marshall McLuhan’s aphorism “the medium is the message,”⁷ and to the notion of “migrating materials” which are uprooted from their homes deep inside the earth, used by humans for a finite period of time, and eventually end up in landfills or oceans.⁸

⁵ Eva Horn, “The Anthropocene Sublime: Justin Guariglia’s artwork,” in Reiss, *Art, Theory, and Practice*, 1–8.

⁶ Tim B. Wride, *Earth Works: Mapping the Anthropocene, Photographic Work by Justin Brice Guariglia* (West Palm Beach: Norton Museum of Art, 2019).

⁷ Marshall McLuhan, *Understanding Media: The Extensions of Man* (New York: Gingko Press, 2013), chapter 1, Ebscohost.

⁸ Migrating Materials was the name of a section of the exhibition “Home is a Foreign Place” that was held at the Met Breuer in 2019. I thank Julie Reiss for introducing me to the phrase. I use the phrase here in a different context.

Elements of Brice's work join with the strains of New Materialist philosophy which imbue inanimate objects with agency and power. The physical aspects of Brice's work invite curiosity and close examination. One then finds an underlying ambiguity between form and content. This ambiguity diminishes in the more recent public work, comprised of text-based signs in different media. This pivot to direct messaging, often in public spaces, represents an increasing urgency to his work which matches the accelerating pace of ecological calamity. Both his earlier and later bodies of work reflect Brice's collaboration (both remotely and in person) with Morton, particularly the latter's theories about *hyperobjects*, *dark ecology*, and a world beyond Nature. Neither Horn nor Wride mentions this connection, which is so critical to the intellectual formation of the work.

This chapter will further broaden our understanding of Brice's art by addressing the significant material, intellectual, and psycho-social differences posed by art intended for gallery walls vs. outdoor installations. Some of his large-scale abstract work draws the viewer into a microcosm or macrocosm of the earth's surface, while his public signs point out our shared experience as a species that has tried to dominate nature. Brice's studio is located in Brooklyn, New York but the works created there are the result of his moving through circles of climate change discourse in universities, research centers, and ecoart exhibitions.⁹

⁹ Brice is a recipient of a National Endowment for the Arts grant, a Howard Foundation Fellow at Brown University, a Woods Hole (as of 2020 the Woodwell) Research Center Senior Fellow and Artist-in-Residence, and was Artist-in-Residence at the Anchorage Museum. In 2019, he was shortlisted for the COAL Art and Environment Prize (France), awarded to artists working to address ecological issues. In 2021, Brice was named a Distinguished Climate Fellow and Special Envoy to the Ecological Crisis, Pratt School of Architecture and Urban Design.

The Merging of Materials with Hyperobjects

Brice began collaborating with Morton in 2015. The philosopher supplies Brice with the language and aphorisms around which he builds his imagery.¹⁰ Morton's notion of *hyperobjects*, particularly those systems which cause environmental damage on a global scale, is fundamental to Brice's experimental studio practices. These vast spatial and temporal occurrences exceed the limits of representation by photorealism or text alone. In contrast to Burtynsky's locally specific photographs of environmental disruption, Brice conveys a much larger picture of terrestrial breakdown in mixed media works such as *Arctic Ocean I*. (fig. 4.2)



Fig. 4.2. *Arctic Ocean I*, 2013.16. Acrylic, carbon black gesso, linen, aluminum panel, 64 x 48 x 1.75"

¹⁰ The artist and the philosopher did not meet in person until 2018. Brice interview by author, 2019.

Horn considers this work an example of

...an aesthetics of the sublime attuned to the Anthropocene...[which] implies both the distance of the observer's point of view and the immediacy of being confronted with changes in the world which exceed our capacity of perception and comprehension. Its most emblematic visual paradigm may, in fact, be the gaze of aerial photography.¹¹

I agree with Horn and would add that this picture has the immediate effect of a world without temporal limits—primordial, pre-human, and post-human. The initial impression of multiple galaxies is subverted by the title *Arctic Ocean I*, from which we infer chunks of breaking ice. The original photograph was taken aboard a C-130 aircraft on a NASA mission (Operation Ice Bridge). From this vantage point, all evidence of a human-centered world is lost in a vast territory of unstructured white fragments against a black field. There is no perimeter, no frame of reference, no hierarchical structure; all is open to interpretation and imagination. Even the subject is ephemeral: the glacial ice will have shifted and melted by the time the work is seen. The huge scale of the picture intensifies and merges the mysteries of space, the oceans, and the insignificance of humans relative to the universe. The additive layers of pigment, gesso, and linen elevate the work from documentary photography to an artistically crafted, unique product.

¹¹ Eva Horn, "The Anthropocene Sublime," 4.

Jakobshavn I (2015-16) is the pictorial reverse of *Arctic Ocean I*, resulting from the lens zooming in on an ice sheet, rather than zooming out. (fig. 4.3)



Fig. 4.3. Jakobshavn, 2015-16. Acrylic, 9 polystyrene panels, 192 x 133 x 1.75 in

Both works transcend a literal interpretation of the icons of climate change—realistic views of calving glaciers, polar bears atop floating chunks of icebergs, and diminishing ice sheets—with a new language of ice. Rather than focusing on the physical, contextual, and mapped reality of Arctic ice, as seen in the paintings of Diane Burko or

the pastels of Zaria Forman, the ice becomes something mysterious, even unknowable. We could say the ice is out of context, in some ways paralleling the displaced ice chunks in the work of artists such as Tavares Strachan, Stefano Cagol, and Olafur Eliasson.¹²

In *Jakobshavn I*, the blown-up detail of ice, now transformed by paint and textured polystyrene (Styrofoam), depicts something incomprehensible and abstract. At the same time the outsized scale, cropping, and decontextualization of the photo draws viewers close and erases the boundary between the ice landscape and the viewer. The aesthetic experience precedes cognition of the subject. The artist has abandoned a culturally specific visual vocabulary in order to coax the viewer to think more broadly about the biosphere. Zeki's theories of art and ambiguity quietly insert themselves into the experience of both works of art. While the brain searches for knowledge about the images, it will run through a series of perceptual functions. Some of these neurological perceptions will be unambiguous and universal, while others will be influenced by culture and memory and will be open to several interpretations. Ultimately the brain will "finish off" any visual questions about what it sees,¹³ aided by title labels.

Both *Jakobshavn I* and *Arctic Ocean I* are visual responses to questions Morton poses in *The Ecological Thought*. What does environment mean anyway? Where do we draw the line between us and the galaxy? If a post-modern environment entails a radical openness, how does that appear in art forms? Brice's huge, cropped, non-contextual

¹² The works referred to are Strachan's *The Distance Between What We Have and What We Want* (The Arctic Ice Project), 2004-8; Cagol's *The Ice Monolith*, 2013; and Eliasson's *Ice Watch*, 2014, 2015, and 2018. For a discussion of viewer impacts from these projects see Reiss, "Terra incognita: exhibiting ice in the Anthropocene," in *Art, Theory, and Practice*, 77-86.

¹³ Semir Zeki, "The Neurology of Ambiguity," *Consciousness and Cognition* 13, no.1 (2004): 2,17, <https://doi.org/10.1016/j.concog.2003.10.003>.

views assist us in “thinking big” about the universe and overcoming artificial divides between us and “nature out there.” Landscape has shed its local aspect; everything is environmentally interconnected.¹⁴ Specifically, the Arctic is not as remote as it is portrayed in the media and popular culture, but is connected with ecological systems around the world. These works question our assumptions about near and far, us and other entities “out there,” and what is authentically natural vs. what appears natural. Which brings us to the issue of materials.

Arctic Ocean I and *Jakobshavn I* are both crafted of materials that are widely considered antithetical to environmental preservation. Acrylic, aircraft-grade aluminum, and polystyrene are not ecologically friendly, and this confounds the engaged viewer. Why is Brice using them? He leans heavily on Marshall McLuhan’s aphorism “the medium is the message,” removed here from the context of 1960s communications media. Brice’s relationship with materials is ironic, savvy, and critical. By using non-renewable, non-sustainable, non-recyclable products, he implicitly criticizes the production of industrialized, technological, automated processes, materials, and products that harm the environment.¹⁵ Other mined products are a health hazard to humans. For example, styrene (made from oil/petroleum) is known to be both genotoxic and carcinogenic, and carbon black can cause cancer and/or damage the reproductive system.¹⁶

¹⁴ Timothy Morton, *The Ecological Thought* (Cambridge: Harvard University Press, 2012), 1-15.

¹⁵ Brice, interview by the author.

¹⁶ Dylan Kerr, “Art Is Beautiful. It Could Also Kill You. Here Are 7 Deadly Art Materials to Watch Out For,” Artnet news, September 14, 2017, <https://news.artnet.com/art-world/7-deadly-art-materials-to-watch-out-for-1081526>; “Health and Safety Information on the products we sell,” Artsupply.com, http://www.artsupply.com/headerpages/safety_sheet.htm.

Brice has often acknowledged the irony of using material that will last forever, outliving the temporality of the ice he portrays. He explains, “Polystyrene is a very naughty object; it has a lot of baggage. It’s a product of the Anthropocene, a human-made product, yet it’s derived from fossil fuels. If left alone, polystyrene will never biodegrade.”¹⁷ As to why he finds it an appropriate material for the depiction of ice, he quips: “It’s... ecologically perverted, but sadly, ecologically speaking, those are the times we live in.”¹⁸ Despite its negative implications, the styrene surface in *Jakobshavn I* resembles packed snow and ice and succeeds as an illusionistic piece that crosses perceptual boundaries.

Similar to the previous two works, *Mining Landscape no.129/Au* (2018) inspires prolonged looking because the photographic realism at its core is obscured with a variety of added materials. (fig. 4.4)

¹⁷ Carol Strickland, “The Iceman Cometh: Guariglia Flies with NASA to make Eco-Art,” *Art in America*, September 12, 2017, <https://www.artnews.com/art-in-america/interviews/the-iceman-cometh-guariglia-flies-with-nasa-to-make-eco-art-56475/>

¹⁸ “Justin Brice Guariglia’s Response to the Moral Imperative of our Time,” *Whitewall*, July 29, 2020, <https://whitewall.art/art/justin-brice-guariglia-making-art-response-moral-imperative-time>



Fig. 4.4. *Mining Landscape No. 129/Au*, 2014-2018. Acrylic, 23kt gold leaf, gesso, linen, aluminum panel, 40 x 30 x 5/8 in

The blurring of the local towards the incomprehensible is one way to visualize the notion of a *hyperobject*. This work is one of a series that evokes the hyperobject of mining. When seen as a group, as in the exhibition *Topographies*, (fig. 4.5) these landscapes are particularly effective in expressing Morton's notions of "dark ecology." Both philosopher and artist reject images that are "green" and sentimental; here Brice presents a paradigm of ecological thought that is dark, moody, mysterious, and open.¹⁹ These embellished landscapes are "beyond Nature," that is, they invoke a nature that

¹⁹ Morton, *The Ecological Thought*, 15-16. Morton coined the term "dark ecology" in 2004 and wrote about it first in *Ecology without Nature* (2007).

can no longer be represented as a healthy, holistic ideal because capitalism and consumerism (in which mining plays a large role) have overtaken the planet.



Fig. 4.5. *Topographies*, Maruani Mercier Gallery, Brussels, Belgium, 2018

Although *Mining Landscape no. 129/Au* represents a specific site and we can discern aerial topography, the viewer quickly loses orientation. The dark voids are punctuated with bright gold fields, which in turn contain asymmetrical Rorschach-like inkblots. The repeating horizontal striations recall the television static of old. Shiny metals deployed throughout the surface add visual richness and variety, attracting prolonged viewing. Unlike the photorealism of Burtynsky's *Tyrone Mine #3*, *Mining Landscape* is made up of clues and references to geography, but also to something cosmic or unknowable. The viewer is brought back to earth by the label which lists all the media—acrylic, 23kt gold leaf, gesso, linen, and aluminum panel, much of it industrially extracted and processed. In the *Topographies* exhibition, the mining images

were visually anchored by two cases mounted on steel pedestals, each filled with two unusual objects: a taxidermied cane toad and a meteorite that had been gilded using a centuries-old technique. Cane toads are a threat to biodiversity because they are poisonous, predatory, adaptive, and competitive. The artist explained:

I was making the connection to how humans are like an asteroid and have an impact—in this case the invasive cane toad is wreaking havoc across Australia but it's connected directly back to the role humans played in bringing the cane toad to Australia for their own purposes leading to devastating ecological impact.²⁰

All of these juxtapositions are multivalent. Resources mined from the earth have for centuries been used as artists' materials, presumably for the betterment of humanity. But those same resources, and the human labor involved in extracting them, have been exploited for human material desires. The metals function as signifiers of both material beauty and plunder. Could the predatory cane toad symbolize certain human behaviors and systems?

The 3 M's—Messages, Materials, Modes

Not only do Brice's inanimate materials visually enhance and serve as substance/supports for his art; they may actually hold power and agency, according to New Materialist philosophy. They counter the emphasis on the pictorial subject (mining)

²⁰ Brice, email to author, January 12, 2022.

and ask the viewer to focus instead on objects and material processes. They become Bruno Latour's actors or actants; they produce effects and alter situations, according to Jane Bennett.²¹ Specifically, gold's many associations can change a static gallery-experience template into a dynamic and possibly fraught space. For example, gold was the desired end product in alchemy—"the quest for an agent of material perfection, produced through a creative activity (*opus*), in which humans and nature collaborate."²² It represented the perfection of all matter on any level, including that of the mind, spirit, and soul. Gold is also widely held as a positive symbol of wealth, luxury, religious devotion, power, and the sun. Conversely, it is also associated with avarice, greed, and reckless exploration. These myriad connotations immediately engulf the viewer and enable another layer of interpretation of the gold and other metals present in the artwork.

Further, in the related philosophy of object-oriented ontology, objects are said to exist and have meanings beyond those that humans ascribe to them. They are not passive or inert. Matter comes with a highly complex history of interactions, forms, and compositions. Based on this premise, Brice's materials form a space of their own; humans can enter it but cannot define it. In fact, the human becomes de-centered in the exhibition. It is the metals, plastic products, and fabrics that express a sort of ironic alchemy—the quest for material perfection through chemical magic has resulted in the opposite of perfection: the destruction of nature.

²¹ See Bruno Latour, *Reassembling the Social: An Introduction to Actor-Network-Theory* (Oxford: Oxford University Press, 2005), and Jane Bennett, "The Force of Things: Steps Toward an Ecology of Matter," *Political Theory* 32, no.3 (2004): 347–372.

²² Michela Pereira, "Alchemy" (2018). In Craig, Edward (ed.), *Routledge Encyclopedia of Philosophy*. Routledge. [doi:10.4324/9780415249126-Q001-1](https://doi.org/10.4324/9780415249126-Q001-1)

The isolated elements of Brice's art could be termed "migrating materials."²³ In this exhibition they have been uprooted from their homes deep inside the earth, will be used by humans for a finite period of time, and then end up in landfills or oceans. But once affixed to Brice's art, they will endure indefinitely and serve new purposes. Oil-based polymers, Styrofoam, gold, aluminum, and carbon black serve as entry points to the discourse on anthropogenic environmental disruption and intervention, industrial fabrication, and worldly goods. At the same time, the painstaking application and effects of these materials create something unique and handcrafted. Their unusual imbrication creates curiosity and calls attention to their manipulation by the artist, while being signifiers of extended time. When used ironically, the materials offer up a different kind of agency; they redirect the environmental issues back to the viewer. In all, the gallery ensemble is at once evocative yet specific, mysterious yet identified, abstract yet reality-based. This complexity is precisely what elevates these photo-objects and the assemblage as a whole into art.

Climate Communication from Inner Sanctum to the Commons

While Brice's work in galleries and museums creates new ways of viewing and meditating on human-caused planetary transformation, it privileges artistic experimentation, intellectual abstraction, and aesthetics over community-based dialogue or transformative environmental action. In contrast, the artist's more recent work transcends the limitations of gallery-hung artwork in communicating the climate crisis. (fig. 4.6)

²³ See note 8.



Fig. 4.6. *REDUCE SPEED NOW!*, 2019. Ten solar-powered LED highway message boards, text. Somerset House, London

His large textual signs, made in a variety of mass-produced materials, and found in multiple outdoor locations, negate the paradigm of autonomous artistic creation. Like his earlier photojournalism work, the signs are meant to address the wider public. The artist's imprint disappears as the agency of the spectator rises. Without the sheen and perceived exclusivity of a gallery, and the framing of objects as art, Brice's outdoor installations seem more egalitarian because they gather in new non-art audiences. (fig. 4.7)



Fig. 4.7. *Baked Alaska?* Community dialogue and sign-making activity about climate change with Justin Brice Guariglia. Hosted by the Anchorage Museum. August 6, 2019

The presentation of naked words, mostly divorced from aesthetics, signals a shift in intention from the rarefied gallery experience to a more diverse, community-based form of enlightenment and cultural critique. The signs encourage quick assimilation of information, rather than the slow contemplation needed to absorb the oblique messages in the gallery work.²⁴ This evolution may represent an increasing urgency to his work, and a decreasing ambiguity, though irony will continue to play a part.

²⁴ Some of Brice's mixed-media gallery work feature text, e.g., *Baked Alaska* (2018) and *Capitalist Ruins* (2020).

Precedents of Text in Visual Culture

The unexpected arrangement of words or phrases for artistic expression or social critique, either divorced from aesthetics, or used in combination with aesthetics, has a variety of precedents in visual culture. In literary theory, a text is any object that can be "read," whether this object is a work of literature, a street sign, an arrangement of buildings on a city block, or styles of clothing. It is a coherent set of signs that transmits some kind of informative message.²⁵ As Brice's latest work privileges text, it is useful to cite some pioneering examples of text art, and then cite precedents that speak specifically to the climate crisis.

An early twentieth-century example of text/mass media art that critiqued culture was the photomontage, invented by the Berlin Dadaists. (figs. 4.8, 4.9) Their typography was taken from magazines and illustrated newspapers—mass media that was accessible and understood by mass audiences.



Fig. 4.8. Unidentified artist, Dada photomontage, c.1920. © Widewalls Magazine

²⁵ Wikipedia entry on "Text (literary theory)," quoting from Juri Lotman, *The Structure of the Artistic Text*. Translated from the Russian by Gail Lenhoff and Ronald Vroon (Ann Arbor: University of Michigan, 1977).



Fig. 4.9. The First International Dada Fair, Berlin, 1920. © Cocosse Journal

Disillusioned by German society and culture in the wake of World War I, this “anti-art” movement exhibited works that were anti-personal and anti-expressionist.²⁶ Words, images, and paper bumped up unceremoniously against each other, creating a chaotic effect. The Dadaists set a tone and methodology for cultural disruption which Brice follows, if not in style, then in concept.

Later in the century, American artists such as Barbara Kruger, Jenny Holzer, Ed Ruscha, and Bruce Nauman forged styles that foregrounded text as a means to communicate cultural clichés, power and identity struggles, and the pervasiveness of media, money, and political rhetoric in our daily lives. Brice’s signs are descended from this artistic lineage, though his message is global rather than culturally or gender-

²⁶ For a summary of the photomontage in Berlin see Jeanne Willette, “The Photo-Montage Revolution: Dada in Berlin,” *Art History Unstuffed*, October 11, 2019. <https://arthistoryunstuffed.com/the-photo-montage-revolution-dada-in-berlin/>

specific. Artist Barbara Kruger uses her graphic design skills and experience in public spaces as diverse as building facades, busses, and construction sites to critique consumer culture, gender roles, and right-wing politics. When bold, colorful typeface usually associated with corporate advertising is recontextualized in surprising locations at large scale, viewers are forced to take notice and decipher new meanings from clichés or pithy language. (figs. 4.10, 4.11)



Fig. 4.10. Barbara Kruger, *Untitled (It's a small world but not if you have to clean it)*, 2000. Vinyl billboard, Times Square, New York



Fig. 4.11. Barbara Kruger, *Untitled (Blind idealism is...)*, 2016-2017. Hand-painted mural. The High Line, New York City

Kruger provides an outsized forum for the expression and discussion of her personal beliefs and questions, other writers' quotes, and declarative judgmental statements. Their appearance in the public realm gives sanction to these ideas, but also gives sanction to the viewer to form their own judgments about the rhetoric. The murals are also a vehicle for shouting out controversial ideas in a safe space. It's as if the metaphorical elephant in the room has been allowed to parade outside.

Another important forerunner in the practice of using words and ideas in unexpected public spaces is artist Jenny Holzer. Using her own aphorisms and truisms, as well as excerpts from writers, poets, and sound bites from breaking news, Holzer turns thoughts into electronic signs, light projections, and LED flickering signboards. Words move and flash, sometimes in color, stopping spectators in their tracks and causing them to meditate on the messages. (figs. 4.11, 4.12) The language is direct, sometimes even shocking or disturbing, and always speaks to the tribulations, sexism, and violence of contemporary life. By placing the epigrams within the urban landscape, a tension is created between their similarity to outdoor advertisements and the personal beliefs they express. Passersby do not expect signs about abuse of power in Times Square, nor about swearing on the Bible in our nation's capital, yet these locations are apt as seats of capitalist power and so-called democratic separation of church and state.

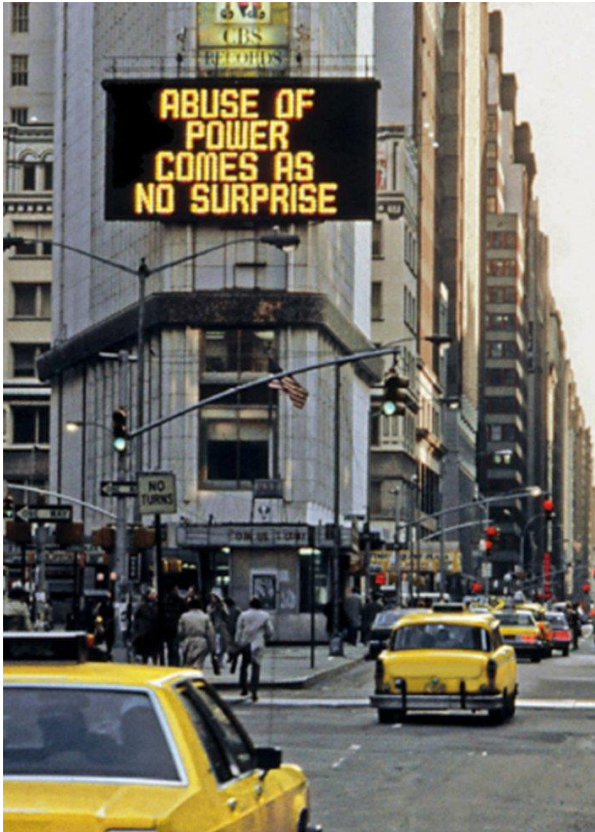


Fig. 4.11. Jenny Holzer, *Abuse of power comes as no surprise*, 1982. LED sign, Times Square, New York

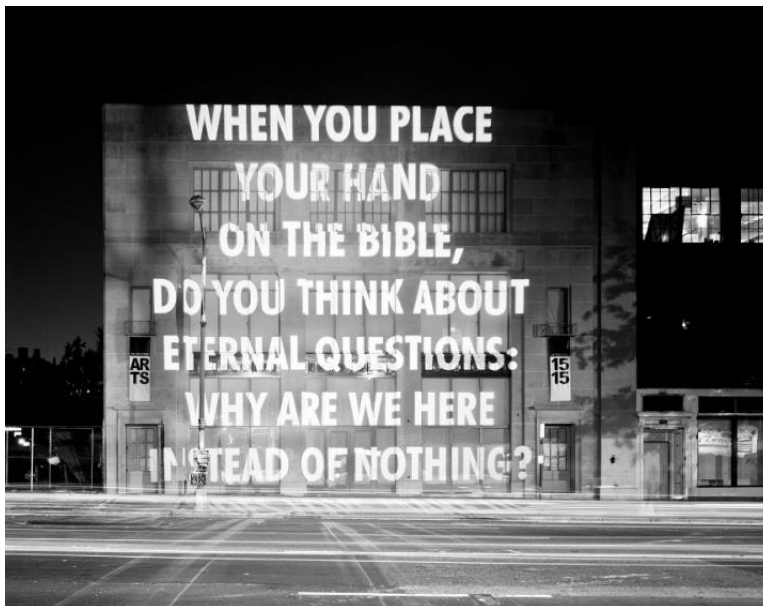


Fig. 4.12. Jenny Holzer, *Untitled*, 2004. From the Washington, D.C. xenon projection project, light projection

Kruger and Holzer use commercial-looking means and methods to display inflammatory or ironic text in places where people might least expect them. These are meant to tap into the spectator's subconscious or provoke debate. As prominent contemporary artists, they helped pave the way for Brice to obtain commissions that allow him to express topical issues in bold ways in the public sphere.

Brice's art can be considered a form of environmental activism that builds upon the iconic environmental images and slogans seen in cartoons, illustrations, and photos in magazines and newspapers, films, television specials, and ads going back to the 1950s.²⁷ But unlike those forms of straightforward propaganda which were meant to elicit an emotional response, Brice's public work is filled with ironic or pithy neologisms, some of which may require decoding or familiarity with the buzzwords of climate activism. His work as a public artist/activist finds company with a host of other international artists who aim to bring climate awareness to the general public through outdoor projects such as light projections, billboards,²⁸ and community actions. One of the most notable collectives, Cape Farewell, is a non-profit that engages artists, writers, scientists, and educators to collaborate on ecological projects around the world.²⁹ The

²⁷ For a comprehensive study of these images and their intentions and effects, see Finis Dunaway, *Seeing Green: The Use and Abuse of American Environmental Images* (Chicago: University of Chicago Press, 2015).

²⁸ In 2010, Philadelphian Zoe Strauss photographed the aftermath of the BP Gulf of Mexico oil spill off the Louisiana coast. Two views of burning oil on the Gulf, both titled *Grand Isle Beach, Grand Isle, Louisiana*, were exhibited on two adjacent billboards in a Northeast Philadelphia neighborhood, and also in an exhibition at the Philadelphia Museum of Art titled *Zoe Strauss: Ten Years* (2012), thereby expanding the environmental narrative into diverse locations.

²⁹ From the Cape Farewell website: "Cape Farewell continues to build an international collective awareness and the cultural response to climate disruption. Over 140 artists have created operas, films, artworks, pop music and novels which address the climate challenge and through the process of making art, vision a sustainable and exciting cultural future." <https://www.bucklandart.com/advocacy/cape-farewell/>.

group, led by founder David Buckland,³⁰ made several sailing expeditions to Arctic waters (2005-2009) which resulted in a series of light projections titled *Ice Texts*. (fig.

4.13)



Fig. 4.13. David Buckland and other Cape Farewell participants, a selection of *Ice Texts*, 2005-2009. Projected light on glaciers, East Greenland. © David Buckland Art 2021

By projecting words on icebergs in a sort of performance, these icons of global warming become actants that shape our experience of them in new affective ways. By “burning” aphorisms on the ice, the artists bring a new kind of attention to its ephemeral

³⁰ Buckland identifies as a “Lens-based artist, Film director & producer, Curator, Founder & Director, Cape Farewell.” <https://www.bucklandart.com/about/>.

beauty. In a gesture to prolong the performances for posterity, the text projections were caught on camera and film, exhibited, and published.

In addition to generating an aesthetic response, the *Ice Texts* give rise to an anxiety about the unstable future of our biosphere and even humankind. In imagining the disappearance of the icebergs (and of other species), "...our usual historical practices for visualizing times, past and future, times inaccessible to us personally—the exercise of historical understanding—are thrown into a deep contradiction and confusion."³¹ This statement by Dipesh Chakrabarty introduces his outlook on the Anthropocene and climate change. His "long view" of the Anthropocene posits a collision of three worlds—the history of the planet (geology), the deep history of human and animal life (biology), and the history of human-induced carbon cycle acceleration (modernization/globalization). The meeting between contemporary humans and disintegrating ancient matter that occurred during Cape Farewell's expeditions metaphorically depict this collision, even as their mission is to cultivate a sustainable future. The icebergs represent earth's ancient landmasses, the artists represent the newcomers in the history of biological life, and the expedition disrupts the Arctic's fragile ecosystems and carbon cycle (though it is not nearly as detrimental as commercial shipping and luxury cruise ships).³² The texts portend the ice's imminent end; thus we lose our connection to ancient geographies and possibly our future ones.

³¹ Dipesh Chakrabarty, "The Climate of History: Four Theses," *Critical Inquiry* 35, no. 2 (2009): 198.

³² See David Nikel, "As Arctic Cruise Tourism Booms, Are The Risks Worth It?," *Forbes*, June 30, 2019, <https://www.forbes.com/sites/davidnikel/2019/06/30/as-arctic-cruise-tourism-booms-are-the-risks-worth-it/?sh=20cd8757586f>, and Jonathan Saul, "As Arctic ice melts, polluting ships stream into polar waters," *Reuters*, August 28, 2020, <https://www.reuters.com/article/us-climate-change-arctic-shipping-analys/as-arctic-ice-melts-polluting-ships-stream-into-polar-waters-idUSKBN25O0L8>.

Artist Amy Balkin joined the 2007 Cape Farewell sailing expedition to East Greenland's Blosseville coast. With Buckland, she expanded the narrative of the ice texts by projecting phrases from economic parlance as in *Discounting the Future*. (fig. 4.14)



Fig. 4.14. David Buckland and Amy Balkin, *Discounting the Future*, 2007. Video still. © David Buckland

Just as today's money and financial markets will be worth less in future decades, so too will the ice, imagined here as a commodity. In fact, it will vanish altogether. Will humans suffer the same fate? Linking diminishing personal assets with melting icebergs brings an emotional quotient into an impersonal medium.

Balkin's concerns with environmental rights, territorial injustices, and public domain issues have resulted in a project called *Public Smog* (2004–ongoing) in which she purchases carbon-gas offset credits in regulated emissions markets, then withholds

them to create “clean air parks” in the Earth’s atmosphere.³³ The legal and financial transactions are real but invisible to the public, so Balkin created a series of videos and advertising billboards to inform and stimulate public awareness. They display photographs of the intended park locations, overlaid with ironic aphorisms, boosterism slogans, or simple agitprop. (figs. 4.15, 4.16)

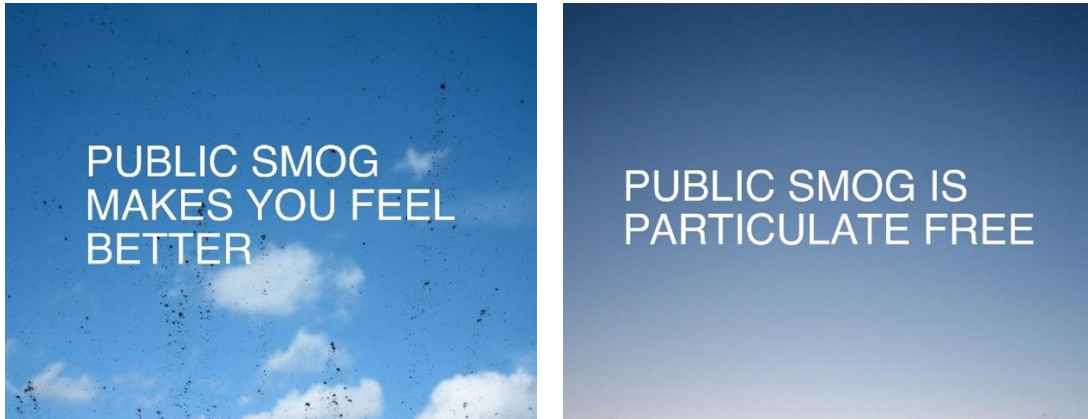


Fig. 4.15. Amy Balkin, *Public Smog*, stills from Adobe flash video loop, 2006-2021. © Amy Balkin



Fig. 4.16. Amy Balkin, *PUBLIC SMOG IS NO SUBSTITUTE FOR DIRECT ACTION*, 2009. Billboard, Bonamoussadi, Douala, Cameroon. Photo: Benoît Mangin, courtesy of the artist

³³ To date, parks have opened over California and the European Union, and an attempt was made in Cameroon in 2009. For a full description of the project and its theoretical basis see the artist's website <http://tomorrowmorning.net/publicsmog>

Balkin's carbon offsetting is not a deception, but many offset schemes are. Offsetting is not an exact science and is prone to flaws or scams; as such, it may not alter significantly the course of climate change.³⁴ In recent years, a shocking number of highly visible corporations, many that claim to be environmentally and socially ethical, use this type of "greenwashing" to cover up their unwillingness to reduce carbon emissions. They hire public relations firms to feign participation in environmental cleanup efforts, rather than take concrete measures to lessen their environmental impacts. Balkin's billboards mimic the effective mainstream marketing campaigns that these big companies use, while advocating for her own authentic project.

The merger of Ecophilosophy, Text-based Signs, and the Visitor

Similar to the *Public Smog* precedent, Brice, in conjunction with the New York City Mayor's Office of Climate Policy and Programs, and The Climate Museum, placed ten solar-powered highway signs with Morton's ecological aphorisms across five New York City parks and public spaces.³⁵ (figs. 4.17, 4.18)

³⁴ Alia Al Ghussain, "The biggest problem with carbon offsetting is that it doesn't really work," Greenpeace, May 26, 2020, <https://www.greenpeace.org.uk/news/the-biggest-problem-with-carbon-offsetting-is-that-it-doesnt-really-work/> and Patrick Greenfield, "Carbon offsets used by major airlines based on flawed system, warn experts," *The Guardian*, May 4, 2021, <https://www.theguardian.com/environment/2021/may/04/carbon-offsets-used-by-major-airlines-based-on-flawed-system-warn-experts>

³⁵ One of the signs in the exhibition, titled *We Are the Asteroid*, debuted at Storm King Arts Center in 2018 in the group show *Indicators: Artists on Climate Change*, just prior to Climate Signals.



Fig. 4.17. *Climate Signals*, highway sign, LEDs, text. Sunset Park, Brooklyn, 2018



Fig. 4.18. *Climate Signals*, highway sign, LEDs, text. Hunt's Point Riverside Park, Bronx, 2018

The Climate Museum, established in New York City in 2018, is the first museum in the US dedicated to the climate crisis. Its staff works out of temporary spaces which they redesign and operate.³⁶ Their mission, as stated on their website, is “to inspire action on the climate crisis with programming across the arts and sciences that deepens

³⁶ The founder and director of the museum is Miranda Massie. As of this writing, the museum has “launched an initiative to scale the Climate Museum out to year-round space to make our pathbreaking work more accessible to more people.” See <https://climatemuseum.org/mission>.

understanding, builds connections, and advances just solutions.” Brice’s exhibition, titled *Climate Signals: Engaging New York City in the Climate Conversation*, was one of their first, and was hugely successful in terms of visitation, outreach, and press attention.³⁷ The museum, in partnership with neighborhood groups, targeted locations where the city is especially vulnerable to sea-level rise. They also wanted to ensure that the installations drew attention to social and environmental injustices, placing signs in neighborhoods where people of color experience disproportionately higher temperatures and more pollution than white neighborhoods, as well as sites in Lower Manhattan and Wall Street—iconic locations of global finance and wealth.³⁸ To ensure that the messages were understood by most populations, the signs flashed in the primary languages of the neighborhoods—Russian, Chinese, French, and Spanish. Additional educational, research, and advocacy outreach was supported by eighteen non-profit institutions.³⁹ This type of programming expands the impact and deeper meaning of the art, which, though written in plain language, may require explanation, offering an invitation to climate change conversation.

The placement of highway signs away from roads, such as in Sunset Park, Brooklyn, or Riverside Park, Bronx, forces pedestrians to read the signs in this unexpected context and consider their current relationship with nature in the face of climate change.⁴⁰ The warnings should jolt them in contradictory ways—pointing out

³⁷ The Climate Museum estimated 6,000 visitors at the signs at the parks, with an additional 6,000 visitors to the exhibition hub at the Admiral’s House on Governors Island and 1,000 participants at their related events. Anais Reyes, CM exhibitions associate, email to author, January 5, 2022.

³⁸ Tatiana Schlossberg, “The Climate Museum is the first of its kind in the U.S. — and its founder is on a mission,” *Washington Post*, September 10, 2021, <https://www.washingtonpost.com/climate-solutions/2021/09/10/museum-miranda-massie-art/>.

³⁹ For a list of city-wide partners see <https://www.climate-signals.org/partners>.

⁴⁰ The Sunset Park neighborhood is susceptible to flooding and endures poor air quality because of passing traffic on the Gowanus Expressway and three nearby fossil fuel plants.

their vulnerability to nature's enormous power, but also urging them to consider the extractive practices and economic systems that are undermining the health of the planet, such as "Abolish Coal Onialism." Though placed in "green" settings, this type of ecoaesthetics expands climate change discourse beyond the notion of "greenness" by spelling out systems that exploit and plunder, citing numbers of climate refugees, acknowledging climate denial as a "killer," and neologizing fossil fuel inequalities.

Given the wide contrasts among the sites, one would expect a wide range of curiosity, climate science knowledge, and reactions among the audiences. Visitor responses were not systematically collected, but an essay in the *New York Review of Books* gives some insight into audience reception. The narrative describes the pilgrimage by two New Yorkers to all ten signs, their satisfaction in doing so, and what they felt and encountered at the sites. To their surprise, two of the signs in the Bronx had been defaced and vandalized. The author opines:

The densely-packed Bronx is the poorest of New York's boroughs, making it more vulnerable to heat of every kind. It isn't easy for the people who live here to leave. What does it mean, in a neighborhood where many forces choke possibility and freedom of movement itself is restricted by transportation that fails on the regular, to be told that climate denial kills?⁴¹

⁴¹ Emily Raboteau, "Climate Signs," *New York Review of Books*, February 1, 2019, <https://www.nybooks.com/daily/2019/02/01/climate-signs/>.

Was the anger that resulted in the vandalism directed at the signs themselves, the idea of art in their neighborhood, or at society in general? Were the signs fully understood? Or were they understood all too well?

An alternate response to the signs is indicated by a photograph of a family (presumably) who seem engrossed in a Brooklyn sign station on “Ask a Scientist Day.” (fig. 4.19)



Fig. 4.19. *Climate Signals*. Highway sign, LEDs, text. Sunset Park, Brooklyn. “Ask A Scientist day,” October 6, 2018. Courtesy of the Climate Museum.

For them the encounter seems productive; the signs are a gateway to knowledge and possible advocacy. This is one of the best possible outcomes for the signs—the inculcation of the next generation to the notions of climate injustice, global warming, and global extractivism.

Brice’s installation of electronic signs against a “natural” backdrop has much in common with the ice texts and billboards of Buckland and Balkin. The sense of peace or awe normally felt in an inspiring landscape is disrupted by jarring signs that warn of

present and future ecological perils. Whereas the texts of Cape Farewell are site-specific to the icebergs, the language in the *Climate Signals* series preceded the art form and the context. Brice confessed that it was Morton's neologisms that stimulated his need to find a "strong public platform."⁴²

In contrast to the non-elite locations and diverse communities that were served by *Climate Signals*, *REDUCE SPEED NOW!* (2019) addresses a more limited sector of the public and causes a different sort of cultural disruption. (fig. 4.20)



Fig. 4.20. *REDUCE SPEED NOW!*, 2019. Ten solar-powered LED highway message boards, text. Somerset House, London, UK

Commissioned by Somerset House to mark Earth Day 2019, Brice was granted access to a grand physical space associated with royalty, empire, and the arts, where

⁴² Phong Bui, "Art in Conversation: Justin Brice Guariglia with Phong Bui," *Brooklyn Rail* (April 2019), <https://brooklynrail.org/2019/04/art/Justin-Brice-Guariglia-with-Phong-Bui>, accessed June 2019.

he could communicate messages about ecological crises. Rebuilt around the time of the nascent industrial revolution, Somerset House was first occupied by the Royal Academy of Arts, The Royal Society, and the Society of Antiquaries (1779-80). A few years later, the Navy Board and various government agencies took residency. Although most of these entities have long departed, and a Trust was established in 1997 to develop Somerset House for public use, many associate the site with a conservative tradition and a powerful cultural elite.⁴³ Against this background of privilege and imperialist history, Brice gives visibility to the voices/written words of poets, philosophers, and writers from around the globe,⁴⁴ many of whom have not had this kind of exposure. The courtyard becomes a stage for a different kind of interaction between ideas, physical objects, and spectators. Like Holzer's iconic signs and projections, the imposition of culturally fraught words flashing in unexpected locations has the ability to make casual passersby stop and engage intellectually. Whereas Holzer's electronic work often carries aesthetic appeal through bold color, sculptural form, and pulsating light,⁴⁵ Brice's banal metal signs are not aesthetic objects, nor do they appear in art galleries, though one could argue that the orange-hued LEDs seen against black backgrounds are visually appealing. Staggered at ground level, unframed, and unattached to gallery walls, the display allows visitors to move about freely as they read messages. This

⁴³ Today the building is home to the prestigious Courtauld Institute of Art, while the courtyard hosts free ice skating, concerts, art and fashion shows.

⁴⁴ Contributors of text include Justin Brice, Greta Thunberg, Marian Womack, Zadie Smith, Craig Santos Perez, Bruno Latour, Timothy Morton, Kathy Jetnil-Kijiner & Aka Niviana; 12 Indigenous elders: Kgao Qamme & Kgamxoo Tixhao (Botswana); Floriza Da Cruz Pinto (Brazil); Lyudmila Khomovna (Siberia); Atome Ribenga (Gabon); Mamo Evangelista Mojica (Colombia); Barbara Gibson-Thorbe (Australia); Rita Blumenstein and Marie Meade (Alaska); Aoki Hiroyuki (Japan); Julieta Casimiro (Mexico); Aama Bombo (Nepal).

⁴⁵ Some exceptions include *Sign on a Truck*, 1984, and the recent LED message-embedded trucks used for *Light the Fight, It is Guns, and Vote Your Future* (all 2018).

arrangement integrates art and life, removing any stigma of art elitism. Further, visitors were invited to contribute to the artwork by submitting their own aphorisms for a dedicated sign. These were captured on video and posted on YouTube.⁴⁶ Some of the more clever ones include "more bees please," "plants are citizens," and "keep the coal in the hole." *REDUCE SPEED NOW!* does not capture attention through beauty or aesthetics but rather through surprise, displacement, accessibility, and participation.

The signs themselves can be read through the lens of McLuhan's notions of medium as message, developed in the context of the electronic communications media of the 1960s. McLuhan saw mid-twentieth-century mass media as potent carriers of content as distinguished from the content itself, and as powerful agents in society. In other words, *how* we consume information influences *what* we learn from it. One of his more controversial theories is that content (message) becomes inconsequential to society because the medium overshadows it, sways our thought patterns, and contains unanticipated subliminal effects. Brice's twenty-first-century signs carry the legacy of these pronouncements, although they aim for different consequences and a different sort of power not associated with advertising or commercial purposes. (figs. 4.21, 4.22)

⁴⁶ "PUBLIC CONTRIBUTIONS REDUCE SPEED NOW!", Somerset House, London, 2019, YouTube, <https://www.youtube.com/watch?v=XJ816LfU4Uk>



Figs 4.21, 4.22. *REDUCE SPEED NOW!*, 2019. Ten solar-powered LED highway message boards, text. Somerset House, London, UK

For McLuhan, “the message of any medium or technology is the change of scale or pace or pattern that it introduces into human affairs”; the medium is an “extension of ourselves.”⁴⁷

If these two components are theoretically divorced, how do they function together in Brice’s signs? How do they enhance environmental communication? In this case, each component bolsters the other so this analysis integrates, rather than separates them. The signs are technically LED message boards, digital media that display a pattern of words that continuously run across a screen at a consistent rate. There is a high contrast ratio between the text and the screen (illumination). LEDs have been proven to hold benefits for mood and cognition, and when LED text moves horizontally or flashes, it appeals to the brain’s desire for variability.⁴⁸ The color orange is associated with energy, stimulation, and attention-grabbing and is often used for traffic signs and advertising.⁴⁹ When entering the courtyard, the visitor is attracted to the orange illuminated text, and the pattern and movement of the diodes in a positive way. The language carries the content, though McLuhan would say that language is the *medium* because it extends our thoughts out into the world. In either case, the pull of the medium will cause visitors to linger long enough to read all the text/prose/poetry, which is Brice’s goal. On another level, the electronic message boards are associated with land and road development, mass communication, and danger. More broadly, they are

⁴⁷ See note 7.

⁴⁸ “Cognition at the Speed of (LED) Lights,” Association for Psychological Science, March 17, 2016, <https://www.psychologicalscience.org/news/minds-business/cognition-at-the-speed-of-led-lights.html> and Robert Haynes, “The Influence of LED Lighting on Attention and Long-Term Memory,” *Psychreg Journal of Psychology*, June 19, 2021, <https://www.psychreg.org/led-lighting-attention-long-term-memory/>.

⁴⁹ Kendra Cherry, “The Color Psychology of Orange,” Verywellmind, October 6, 2021, <https://www.verywellmind.com/the-color-psychology-of-orange-2795818>.

symbols of an economic system that promotes the endless building of infrastructure, which implies environmental degradation. Brice is quoting McLuhan, but reversing the aphorism. He is using technology as the medium to grab attention, and the language as the content of global environmental crisis. But medium and message alone are not what makes *Reduce Speed Now* effective. We must consider context.

Brice's unconventional use of the medium, its placement, and its replication forces new types of engagement with climate crisis topics. These psychologically charged, pulsing signs intervene and shock in an environment not accustomed to critique, thereby enhancing their effectiveness and value. The critique is not aimed at Somerset House as it functions today, but is meant to encourage reflections and conversations about its past colonialist legacies, authoritarian power that resided there, and a culture that devised an industrial revolution, which led to climate change. The banal message boards, typically associated with nearby construction dangers, are elevated into a public art context by moving them to an illustrious courtyard. When seen in a large group, they serve as warnings of a much larger catastrophe—the ecological crisis. One of the signs proclaims “There is no planet B!”—a message that should shake us to our core. There is an incongruity about mass-produced pieces of metal and LED giving voice to personal observations, laments, and philosophies from global ecological thinkers (McLuhan's separation of media from content). These diverse examples come from sources including Greta Thunberg, Bruno Latour, Indigenous elders, Kgao Qamme & Kgamxoo Tixhao (Botswana), Floriza Da Cruz Pinto (Brazil), and Lyudmila Khomovna (Siberia).⁵⁰ Some elicit emotional responses like the sign that flashes in quick

⁵⁰ For the full list of contributors see <https://www.somerset-house.org.uk/whats-on/earth-day-season-2019/reduce-speed-now-justin-brice-guariglia>

succession the names of species that are extinct or on the brink of extinction, or one that reads "... I love you naturally without pesticides," or another, "Goodbye Arctic Ice." The equal size and height of the signs and the continuous running of text remove a sense of fixed time and falsely constructed hierarchies of importance. No single experience of climate change appears more relevant than any other. These international perspectives give the visitor a broader understanding of climate change's impact.

One common criticism of much ecoart is that it treats climate change as a universal problem without apportioning blame; without differentiating between those who cause the most damage and those who suffer the most. *REDUCE SPEED NOW!* avoids that pitfall by including authentic authorities who have observed or live at the front lines of climate breakdown and speak their truths about the origins of their misery.

Eco-Haikus and Entertainment

As previously mentioned, context plays a significant role in how the language of science and environmental advocacy is perceived and understood. Phrases, one-liners, and brief aphorisms seem especially suited to public spaces where people are often hurried and distracted. Brice translates the enormity and gravity of climate breakdown, land degradation, and ecological crises into a visual form that can be understood quickly and collectively. Using his and Morton's gifts for irony, Brice successfully joins eco-aphorisms with a popular form of entertainment in his series *Eco-Haikus for Marquees* (2019).⁵¹ (fig. 4.23)

⁵¹ The display was commissioned by the Summit Series: Los Angeles and ran from November 8–10, 2019.

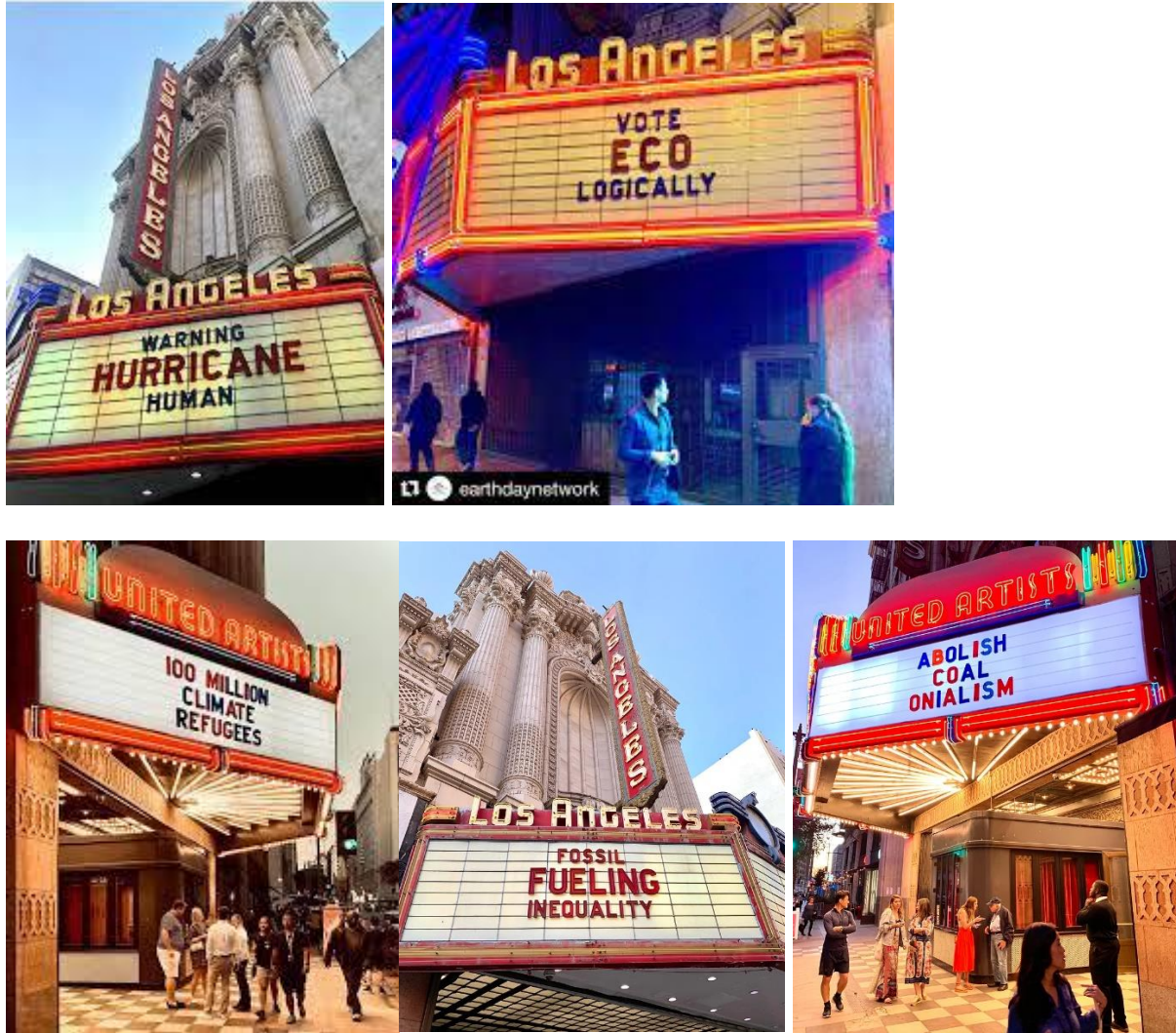


Fig. 4.23. Justin Brice and Timothy Morton, *Eco-Haikus for Marquees*, 2019, Los Angeles

This project capitalizes on the fact that Hollywood film culture dominates Los Angeles and beyond, and that movie theaters are popular sites for entertainment and gathering. Because people enter willingly, Brice's messages do not come across as forced didacticism. Visually, movie marquees are larger than life, just like the movie stars who inhabit the screens inside. The marquees not only display titles but generate a sense of

excitement. They are not normally the sites of political slogans.⁵² Brice subverts the traditional form and function of the marquee to raise awareness or alarm in moviegoers and passersby around environmental injustice and climate emergencies. In a symbolic way, the marquee's position above foot traffic inverts the hierarchical position that humans have historically assumed over all things. The scale and location of the message should instill humility.

In an analogy to movie culture, Brice can be compared with independent filmmakers who evade the Hollywood system by telling truths that do not please or entertain. As professor of anthropology Sherry Ortner explains in a study of American independent film as a cultural movement, "Independent films seek to tell the truth about contemporary society. Where Hollywood films seek to provide escape and fantasy, independent films seek to tell realist or hyper(bolic)-realist stories about the world as it really is, in all its ugliness and cruelty, or all its weirdness and strangeness, and if this makes audiences uncomfortable, so be it."⁵³ Brice's art and Morton's writing seem aligned with the independents' mission to address alarming realities head-on. Morton's ecological outlook is not upbeat or positivistic; some consider it dystopian. His notion of "dark ecology" includes negativity, hesitation, uncertainty, irony, and thoughtfulness.⁵⁴ The eco-haikus have more of an affinity with Hollywood disaster movies than with blockbuster action, comedy, or romance.

⁵² Holzer displayed a series of personal "Truisms," some of which had a political slant, on movie marquees in New York City in the 1990s.

⁵³ Sherry B. Ortner, "Against Hollywood: American independent film as a critical cultural movement," *HAU: Journal of Ethnographic Theory* 2, no. 2 (2012): 11–12.

⁵⁴ Morton, *The Ecological Thought*, 16.

While pondering the tensions between mainstream cinema and its cultural critics, we are reminded of the work of artist Ed Ruscha. Paintings such as *The Music from the Balconies* (1984) dismantle ideal cinematic imagery with disquieting phrases. (fig. 4.24)

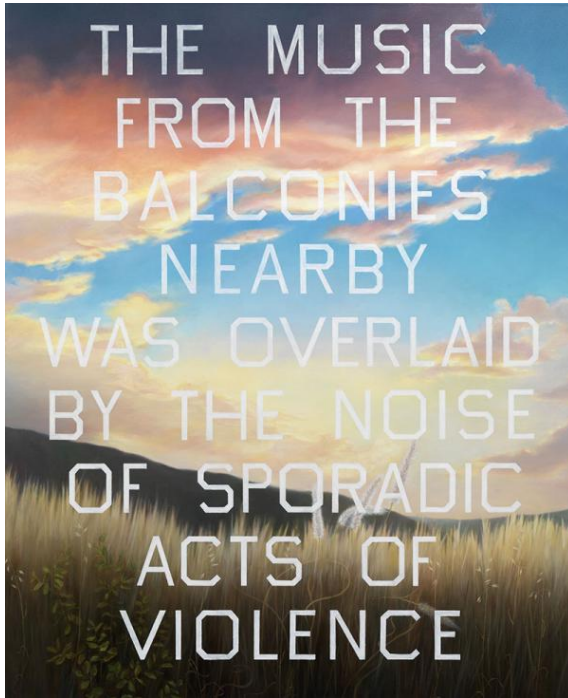


Fig. 4.24. Ed Ruscha, *The Music From the Balconies Nearby*, 1984. Oil on canvas, 99 x 81 inches

In other text-driven work, Ruscha challenges the excesses of Hollywood culture. In a parallel critique via the marquees, Morton and Brice present bold witticisms about climate change that are antithetical to mainstream entertainment and the glitz and profligacy of the Hollywood lifestyle. (figs. 4.25, 4.26) In a broader context, the marquees fit within a critique of Hollywood's environmental impact, exposed by environmental media scholar Hunter Vaughan.⁵⁵ Though Hollywood markets itself as environmentally conscious, and several of its films take a pro-environmental stance or

⁵⁵ Hunter Vaughan, *Hollywood's Dirtiest Secret: The Hidden Environmental Cost of the Movies* (New York: Columbia University Press, 2019).

satirize climate deniers (*Avatar*, 2009; *Don't Look Up*, 2021), its production methods and materials have hidden harmful environmental consequences, with examples ranging from excessive water use to energy-greedy server farms.



Fig. 4.25. *Eco-Haiku*, 2019, Los Angeles Academy



Fig. 4.26. Swarovski crystal installation for the 2019 Awards, Hollywood

Brice's marquees become part of that built environment, if only temporarily. They catch the bystander by surprise with their large-scale, colorful lights and formatting. But the words disrupt the spectator's assumptions about movies and force a brief intellectual demand upon them as they must puzzle out the aphorism. Ultimately the limbic system, the part of the brain involved in our behavioral and emotional responses, does its work by relating the message to our survival via the question, "how does this affect me?" Consequently, the marquees serve as a form of cultural critique for ourselves.

Lighting the Language of Environmental Awareness

In his 1979 essay "Earthwords," art critic Craig Owens describes the eruption of language into the visual arts, by which "*language has become a material entity and art has become interchangeable with writing.*"⁵⁶ Almost forty years later, this axiom still has tremendous weight in visual culture, evidenced by the increasing number of businesses, foundations, hotels, municipal governments, and art museums that are displaying text art not only inside, but on their facades and atria.⁵⁷ Neon text art, following the tradition of artists such as Joseph Kosuth, Bruce Nauman, and Ivan Navarro, continues to deliver topical political and social messaging in simple form. One artist who transmits the climate crisis in neon is Andrea Bowers, whose signs were placed onto the facades of museums in Miami and northern California, locations that are particularly hard hit by volatile weather. (figs. 4.27, 4.28) Commissioned and funded by public and private sources, she transforms the well-known slogan, "Climate Change is Real," into a graphic form associated with fun or kitsch, to reach a broad audience.⁵⁸

⁵⁶ Craig Owens, "Earthwords," *October* 10 (Fall 1979): 122.

⁵⁷ See Jenny Holzer, *For Philadelphia*, 2018, Comcast Center, Philadelphia; Hank Willis Thompson and Network, *The Writing on the Wall*, 2020, US Department of Justice, Washington, DC; P6PA+Architects and s.r.o. (Martin Klejna, Javier Navas Fabregat) Bieblova Apartments, 2017, Prague.)

⁵⁸ The installation at the Perez Art Museum was a collaboration with The Leonardo DiCaprio Foundation and Design Miami during Art Basel Miami, 2017. The slogan was a favorite of DiCaprio's. *Climate Change is Real* was a project commissioned by YBCA with support from Bloomberg Philanthropies for the Global Climate Action Summit, San Francisco, 2018. The word "kitsch" is defined by Oxford Languages as "art, objects, or design considered to be in poor taste because of excessive garishness or sentimentality, but sometimes appreciated in an ironic or knowing way."



Fig. 4.27. Andrea Bowers, *Climate Change is Real*, 2018, Yerba Buena Center for the Arts, San Francisco. Photograph by Charlie Villyard

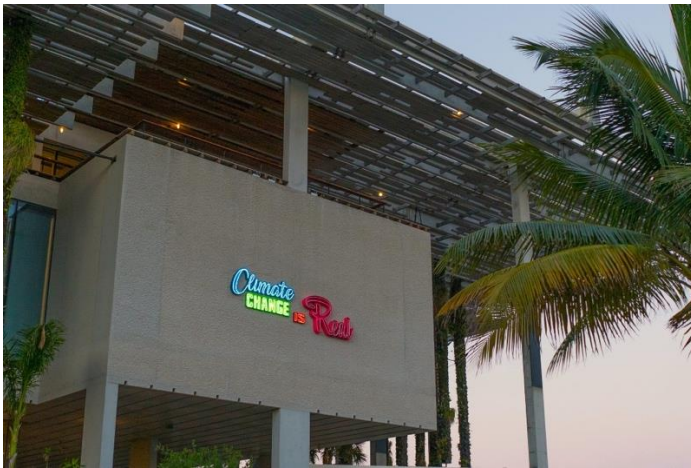


Fig. 4.28. Andrea Bowers, *Climate Change is Real*, exterior Perez Art Museum, Miami, 2017

At San Francisco's Yerba Buena Center, the viewer is initially attracted by the imposition of calligraphic, flowing bright green script over the minimalist glass and steel façade; soon, the implication of the sobering message takes root. At Miami's Perez Museum, varied fonts of different colors and sizes create a stunning dynamic against

the jutting gray architectural block. The visitor must take a pause to distinguish between the aesthetic (fun) and the message (grave). Bowers' work, with the support of her sponsors, can be considered a form of environmental activism cloaked in attractive typography.

Brice's neon signs render a different sort of deception than Bowers', in that the material entity and the writing are infused with allegory, irony, and symbolism. Two recent examples, *Biosphere BBQ* and *Exxtinction*, exemplify the imbrication of words, colored light, and environmental/climate crisis messaging. *Biosphere BBQ* (fig. 4.29) has the familiar look of a roadside restaurant sign.



Fig. 4.29. *Biosphere BBQ*, 2019, Text by Timothy Morton. Neon Sign, 26 x 36 inches

It is deceptively straightforward and visually appealing in its contrast of hot and cool colors, simple contours, and dynamic flame design. But the insertion of just one word, and the play of words invest the trope with new meaning. The word *biosphere* and the orange-red color signify something infinitely more significant than a barbeque dinner.

The neon sign offers an allegory of the hyperobject of global warming, which is both nearby and remote. As the sign lights up, so does our earth. It represents the millions of electric currents and circuits running around the earth which illuminate massive numbers of electronic signs, which drain the electric grid and cause light pollution. The inherent irony is that the energy consumption of the artwork is subject to the critical discourse of sustainability in general.

A critique of non-sustainable and polluting energy sources finds visible form in the work *Exxtinction*. (fig. 4.30) As in the previous work, Brice borrows the design from a well-known image, in this case, the logo of Exxon, the world's largest oil company. (fig. 4.31)



Fig. 4.30. *Exxtinction*, 2019. Text, neon sign, 72 x 19 inches, © Justin Brice



Fig. 4.31. Raymond Loewy, Exxon logo, 1972. Wikimedia Commons

This logo has figured into other environmental protests over the years, e.g., the Exxon Valdez disaster (1989), the ExxonMobil Annual General Meeting of Shareholders at the Meyerson Symphony Center (2006), and Exxon's acquittal in the climate change fraud case in New York's Supreme Court (2019). Over the years, the company name and logo have become synonymous with catastrophic accidents—explosions and oil spills resulting in the death of humans, birds, and sea life, and with the slower violence

perpetuated by petrocapitalism—extraction, labor exploitation, toxic drift, air pollution, delayed destruction of ecosystems, and community displacement. Reductively, the logo is a symbol of a transnational, intergenerational enterprise that puts profit above human and environmental health. Exxon’s history of lies and coverups about its impact on climate change was exposed in 2021.⁵⁹

Brice transposes the immediately recognizable name into a word signifying a gradually escalating disaster—transforming Exxon into Exxtinction [sic]. The word *extinction* is now generally associated with the Sixth Mass extinction, the present period where the rate of species disappearance due to human causes is abnormally high. Pollution and habitat loss from fossil fuel practices, along with climate change, are exacerbating this global-scale event.⁶⁰ Brice alludes to the science, and adds drama to the work by having the sign light up intermittently when an extinction event occurs. This connection is explained in the didactic label. The durational aspect of the work causes the viewer to think about deep time, our brief time on earth as compared to nonhuman organisms, and the temporal proliferation and decline of many species.

Brice’s electrified neon tubes can be placed in conversation with McLuhan’s commentary on the light bulb as a vehicle for communication. McLuhan states, “the electric light escapes attention as a communication medium just because it has no

⁵⁹ Senior ExxonMobil lobbyist Keith McCoy was caught on tape saying the company hid its knowledge of its impact on climate change, and supported a carbon tax solely based on the belief that it wouldn’t pass. McCoy also named eleven senators, including John Cornyn, whom he said are “crucial” to helping ExxonMobil impede climate legislation. See Matt Egan, “Undercover Exxon video reveals an anti-climate campaign,” CNN, July 1, 2021, <https://www.cnn.com/2021/07/01/business/exxon-tape-video-keith-mccoy/index.html>

⁶⁰ See Elizabeth Kolbert, *The Sixth Extinction: An Unnatural History* (Henry Holt & Co., 2014) and Ivana Kottasova, “The sixth mass extinction is happening faster than expected. Scientists say it’s our fault,” CNN online, June 1, 2020, <https://www.cnn.com/2020/06/01/world/sixth-mass-extinction-accelerating-intl/index.html>.

‘content.’ For it is not till the electric light is used to spell out some brand name that it is noticed as a medium. Then it is not the light but the ‘content’ (or what is really another medium) that is noticed.”⁶¹ He would argue that the form of the carrier, in this case, the neon light, is what shapes our experience of the message. Indeed, the neon light is what initially attracts the viewer, fostering associations with entertainment or consumer goods and services. However, I would counter that the environmental discourse engendered by the colored light is just as potent as the medium.

Conclusion

Brice’s environmental advocacy takes physical form in a diverse array of artistic media. The works in this study divide along two poles: abstract mixed media prints intended for galleries, and electronic signs, intended for public outdoor spaces. Since Brice works so closely with Morton, it is reasonable to ask where this partnership fails and where it succeeds. Does ecophilosophy translate effectively into art-making and aesthetics? When it comes to communicating the broad and deep issues associated with climate change, which is more potent on a visceral and intellectual level—Brice’s art in public parks, work shown in courtyards or exteriors of historical buildings and museums, or work shown inside galleries? Do his genres universalize the issues or make distinctions between perpetrators and victims? Are they understood by all visitors?

On the one hand, the signs shown in *Climate Signals* universalize the threats and responsibilities that humanity faces by reducing them to dystopian one-liners. The signs

⁶¹ McLuhan, *Understanding Media*, chapter 1.

speak of present catastrophes and prophesy doomsday scenarios without offering solutions. Viewers are collectively shamed with slogans such as “Neanderthals ‘R’ Us” and “Danger: Anthropocentrism.” Some of the signs, however, do name systems that are perpetrating slow violence, such as coal extraction in “Abolish Coal-onialism,” and the fossil fuel industry in “Fossil Fueling Inequality.” Although the exhibition and related programs reached thousands of visitors, their cognitive or emotional impact cannot be summed up neatly. Nor do we know if casual passersby engaged at all.

In Brice’s multimedia prints, the hyperobjects of glacial melt and surface mining are diffused into something otherworldly and metaphoric. The abstraction blurs the photorealism of the original prints, thereby diminishing the specifics of time and place. This style and strategy potentially interfere with certain viewers’ comprehension of climate change’s effects in remote places. Psychology studies have shown that “artists’ free choice of data focus and artistic styles faces limits when depicting a complex topic such as climate change. A need for clarity or accompanying descriptions to the visualizations, at least when targeted at the general public without art training, might be necessary.”⁶² Brice does provide factual, didactic labels in his exhibitions that counterbalance his pictorial abstraction and root the images in material reality.

On the other hand, the mixed-media work does not initiate a “universal” experience. It causes a disruption in the way we perceive landscape through its scale, lack of topographic context, and puzzling materials. An intense navigation of the

⁶² Ulrike Hahn and Pauwke Berkers, “Visualizing climate change: an exploratory study of the effectiveness of artistic information visualizations,” *World Art* (June 4, 2020): 95, DOI: [10.1080/21500894.2020.1769718](https://doi.org/10.1080/21500894.2020.1769718). See also Liselotte J. Roosen and Christian Klöckner, “Art and Documentaries in Climate Communication: Experiencing the Reality of Climate Change and Leading the Way to Change,” *Art Research International* 5, no. 2 (2020): 524–552.

images, and the scrutiny of their ironic and symbolic material contents, yields a multiplicity of mental pictures of terrestrial breakdown.

Public signage such as *REDUCE SPEED NOW!* at Somerset House makes an effective union of philosophical truisms, surprising media, and unexpected context. The incongruity of road signs filled with profound observations in a grandiose, formerly authority-laden space causes a variety of reactions—shock, disorientation, or curiosity. The movie marquees and neon signs attract through their visual association with entertainment and advertising. Visitors/spectators are beckoned to slow down, read, contemplate, and informally discuss the content. These spontaneous reactions fulfill Brice's mission to reach out to as many people as possible through any means. The medium and the message may be distinct entities for McLuhan, but for Brice their polarities ironically reinforce and add complexity to ecophilosophy about climate change.

Conclusion: Forging Zones of Interconnectedness

In the book *Landscape into Eco Art*, Canadian art historian Mark Cheetham identifies two opposing arguments as to what constitutes the most salient ecoart in the twenty-first century. Pakistani artist and cultural commentator Rasheed Araeen has argued that artists should “abandon their studios and stop making objects...and refocus their artistic imaginations. What the world now needs is rivers and lakes of clean water, collective farms and the planting of trees all over the world. An artistic imagination can in fact help achieve all these objectives; and it should in fact lay the foundation for a radical manifesto of art for the twenty-first century.”¹ In contrast, Cheetham argues that “eco art is most valuable in society when it is ...at a remove from practical ameliorative interventions. Eco art can most meaningfully speak to our climate predicament when it asserts its noninstrumental, aesthetic identity.”² These alternatives—the renunciation of an autonomous studio practice for collective, land-based ecological action vs. using art and aesthetics to activate mental processes and self-discovery in relation to the environment—can each shift consciousness around climate breakdown. The artwork chosen for this dissertation aligns with Cheetham’s preferences for an ecologically themed art that foregrounds aesthetics over field research, reclamation, or remediation, though some of the work functions in communities as catalysts for behavioral change,

¹ Rasheed Araeen, “Ecoaesthetics: A Manifesto for the Twenty-First Century,” *Third Text* 23, no. 5 (September 2009): 683-84. doi:10.1080/09528820903189327. Excerpts quoted in Mark A. Cheetham, *Landscape into Eco Art : Articulations of Nature Since the '60s* (University Park: Penn State University, 2019)

² Cheetham, *Landscape into Eco Art*, 191. Cheetham prefers the term “eco art” as two separate words.

advocacy, or activism. My analysis has demonstrated that images, stories, graphic text, theater, and sensory immersion in carefully constructed environments, are all effective means to communicate the dangers of human-induced planetary transformation. The artworks of Brice, Burtynsky, Pinsky, and the Lithuanian collective forge connections between viewers and the climate crisis by appealing to their senses, emotions, and intellects, or additionally, creating a visceral experience as in *Pollution Pods*. Each offers a potent, activating experience in which the viewer gains a new epistemology of climate breakdown, while potentially learning something about themselves in the process. Prolonged viewer engagement is achieved by utilizing strategies of shock or surprise, ambiguity, immersion, irony, and durational media. The artists specific to this study all employ tactics of message-building. They begin with individual narratives (*Sun and Sea*), or spaces (*Pollution Pods*), or photographs (*The Anthropocene Project*) or signs (*Climate Signals*); each of these become building blocks for a series, an opera, a set of olfactory experiences, and a city-wide signage campaign. At the foundation of all these practices is an inquiry into the science of climate change, ecophilosophy, and knowledge of political ecology.

Ambiguity

Although Zeki theorizes that a viewer will linger in front of ambiguous art long enough to make sense out of it, without more case studies we can't be certain if that holds true for the ambiguous art in this study, or if viewers prefer clear messages to ambiguous ones. This study has shown the different ways that ambiguity is used to draw people into ecoart and prolong their cognitive engagement.

Ambiguity is a useful tool in ecoart, in that it represents many uncertainties of our existence—our fate as a species, the risks of ignoring the IPCC's recommendations though we know the wisdom of them, the false perception (by some) of the remoteness of climactic changes, our reluctance to commit to climate justice in exchange for sacrificing our fossil-fuel based way of life. Each of these artists leverage ambiguity in different ways appropriate to the media in which they work. The strategy is not meant to question the validity of climate breakdown itself, but rather to force viewers to recognize their complicated relationship with their environment. The Lithuanian collective uses ambiguity of the written word and music to match their own professed neutrality toward climate action, and the characters' similar neutrality, a combination of complicity and disengagement. This strategy succeeds on a high intellectual and critical level, but falls flat for those looking for an obvious message about the crisis. If a work is too esoteric, it fails as a piece of ecoart. Brice's ambiguity in medium and materials will be slightly more comprehensible to the average person if they recognize the ironies. The LED signs are especially effective with the general public in directly communicating the forces and systems that drive climate change and species loss. Burtynsky's strategy succeeds precisely because it is so appealing, rather than directly critical. He leverages ambiguous beauty toward an emotional response which leads to persuasion. It has the power to convert climate deniers and influence vast numbers of people toward environmental advocacy. Pinsky's use of visual and visceral ambiguities is the most efficacious strategy to stimulating awareness of environmental imbalances, because the body doesn't lie.

Other Varieties of Cognitive Reach

In thinking about various kinds of intellectual/emotional engagement with ecoart and how those might generate certain types of behavior, I would like to make a more speculative connection to the field of behavioral economics, specifically Daniel Kahneman's premise in *Thinking Fast and Slow*.³ Two major systems govern the way we think. System 1 is intuitive, involuntary, emotional, and fast. System 2 is slow, deliberate, rational, and calculating. We could equate System 1 with affect and the subconscious, and system 2 with extended focus and mental effort. Framing, or the context in which the facts are presented, also plays a major role. Although Kahneman did not corollate his theory with art appreciation or criticism, we can extrapolate from it when discussing factors that might influence the way we perceive environmental risk in ecoart and make decisions in our daily lives based on that perception.

Pollution Pods belongs to System 1, with smell and thermoception (somatic markers) immediately leading the way to cognition. *Sun and Sea* causes the spectator to use System 2, because it requires a lot of mental effort to decipher the messaging, while figuring out which performer is singing, and giving a full hour of attention to all the moving parts of the performance. Brice's abstract prints take extended focus and relational thinking (System 2). His public signs grab attention quickly—in fact, Kahneman lists “reading text on a billboard” as an example of System 1—but they require some decoding, which delays cognition. Burtynsky's *Anthropocene Project* has the viewer operating in both systems of thought. The drama of the toxic sublime image engenders an intuitive emotional response, but the labels and additional scrutiny of the

³ Daniel Kahneman, *Thinking, Fast and Slow* (New York: Farrar, Straus and Giroux, 2013).

photographs reveal truths that require time to absorb. Kahneman posits that most people evaluate risk situations intuitively, but should actually revert to slower, rational thinking to make better choices. In regard to climate crisis art, I believe he would advocate for a balance of strategies and methods that force quick intuitive reactions, and also prolong the processing of content so that viewers could evaluate their proximity to the crisis, or their own complicity, or assign blame to the proper parties, which is where ambiguity comes in.

Bringing Visibility to the Hyperobject of Climate Breakdown

Humanities-based climate change discourse often raises questions about the ways that artists can make the crisis visible in order to shift consciousness. Referencing the definition of *visible* from the Merriam Webster dictionary—“capable of being seen”—Burtynsky is the only artist here who privileges sight as the main transmitter of environmental communication. He is motivated by the act of *seeing* the earth as it is transformed, mediating his vision through his lens. Sight directs the digital stitching of images and printing of his photographs; sight influences the editing of his films. Ultimately it is sight which enables viewers to grasp multiple disruptions of earth’s natural processes. The film *Anthropocene* widens the lens, literally and figuratively, adding context and narrative (though minimal) about the global endeavors to access natural resources to satisfy consumer demands.

Other, broader definitions of *visible*, including “capable of being discovered or perceived, recognizable, accessible, someone or something that can be seen or perceived,” open up the range of modes that enable new epistemologies. The viability of

some of these other modes is illustrated by a comparison of Burtynsky's highway photographs with Pinsky's *Pollution Pods*. Both works address the noxious emissions from fossil fuels. In the former, the viewer sees car colonization (the erasure of land and communities) and its polluted aftermath. In the latter, the visitor feels and smells atmospheric pollution in part due to vehicle emissions. It is the corporeal knowledge that makes pollution recognizable.

The expanded definitions of *visibility* merge here with T. J. Demos' previously cited theory of *sensing* the climate:

When we sense the climate, we *produce* the climate as an object of attention, research, and representation, all of which determine in part our *relation* to that knowledge... To sense—to feel, perceive, detect, apprehend, grasp with the senses—then, is not purely passive, or reflexive, but also active, involving agency, co-relations, and even co-production.⁴

All four practices offer paradigms of sensing the environment, in quite different ways leading to different ends.

Only Pinsky creates an actual embodied experience through olfactory sense and thermoception. Burtynsky helps the viewer “perceive and grasp” the various hyperobjects of environmental destruction by immersing them in large-scale photomurals, AR, VR, and film, which stimulate many senses, including proprioception

⁴ See Introduction, note 17.

and thermoception (Antunes, q.v.). *Sun and Sea* helps the audience discover and recognize environmental transformations and global warming using performance, the written word, and music. The audience is sensing climate change by proxy through the actors who feel the heat of the ocean, see and feel the garbage and plastics, witness the off-kilter seasons and bees falling from the skies. Brice heightens our apprehension of global warming and earth's transformation in his large-scale abstract elegies (with explanatory notes) which create an atmosphere of uncertainty and strange connection with the unknown. Among the artworks discussed, Brice's public signs have the least impact on the senses because they foreground text over aesthetics. Viewers don't actually sense the climate in any way but become intellectually active in processing Morton's aphorisms and other global voices about the climate.

Removing Borders

Morton's theory of ecological thought suggests that we remove borders or barriers between human and nonhuman organisms, and falsely constructed geopolitical territories. The featured artists all visually erase these boundaries either literally or figuratively. Pinsky erects an environmental "iron curtain" between each city, but the transparency of the curtain may be read as analogous to global consciousness. We know that the distinct air pollution of each pod will transcend arbitrary boundaries in the real world. Burtynsky's and Brice's large-scale, cropped, and decontextualized landscapes immerse the viewer in a way that defies separation between what is "out there" and the human experience. Ecological, social, and psychological boundaries are broken in *Sun and Sea*. One aspect of Kershaw's notion of theater ecology suggests

that the theater, the actors, and the audience form a borderless community of dynamic thought, symbiosis and action. More specifically, the energy and affect between actors and audience forms an ecotone, a transition area where two communities meet and integrate.

The Aerial View

Brice, Burtynsky, and the Lithuanian collective use the aerial view or elevated perspective to frame their subjects. What are its advantages or disadvantages in climate breakdown communication? The aerial view, or its extreme variant, the satellite view, has been theorized as a distant, dehumanizing, transcendent perspective of those in power,⁵ a “god trick”—the predominantly male, universalizing, and scientific way of imagining knowledge about the world,⁶ and a form of synoptic vision which is imperial, encompassing, and reductive.⁷ Here, the aerial view has the potential to generate other meanings and encourage different relations to the environment, while also serving an aesthetic function. For example, if we align it with the toxic sublime lens, it will appeal with its formal beauty, evoke awe, and provide a limited amount of information, and possibly keep the viewer/spectator psychologically removed from earth’s destruction, the eco-anxiety of certain individuals, or the grass-roots struggles and violence of those caught up in natural resource wars. From the balcony in *Sun and Sea*, the audience takes on a god-like perspective, but they do not feel superior. The co-creators

⁵ Paula Amad, “From God’s-eye to Camera-eye: Aerial Photography’s Post-humanist and Neo-humanist Visions of the World,” *History of Photography* 36, no.1 (Feb.2012): 66-86, <https://doi.org/10.1080/03087298.2012.632567>.

⁶ Donna Haraway, “Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective,” *Feminist Studies* 14, no. 3 (1988): 575–99. <https://doi.org/10.2307/3178066>.

⁷ Tina Loo, “A Look at *Seeing Like a State*,” *Canadian Historical Review* 97, no.1 (March 2016).

deliberately eschewed the male, scientific gaze for one in which the spectator feels a kinship with the human species (all genders) because they relate to the performers' diverse ages and body types, and their interactions with nature and each other. Brice's photo-based prints offer the most distant and universal view of earth, significantly moving the center of knowledge from micro to macro. This allows for new perceptions of environmental degradation and scale, and of the connections that exist among populations, ecosystems, and the biosphere. Zooming out, whether from above or laterally, removes "the [vernacular] veil" that prevents the acquisition of knowledge of foreign cultures, places, and systems.⁸

Questions of Accessibility

If we presume that the aims of the ecoart presented here are to engage viewers aesthetically, shift consciousness, and instigate behavioral, cultural, and political change around climate change's causes and effects, how do we measure its efficacy? The question may be rhetorical, but there are a few metrics which are useful and can be found in case studies. This study has examined the qualitative differences between the traditional gallery experience, the public venue, and the semi-public venue. Success is often judged by the numbers of visitors at each venue, the number of public commissions achieved by the artist, awards, residencies, catalogue/record/artwork/film sales, critical reviews, and international demand. All four artists/artist groups in this

⁸ This technique was used to great effect in Godfrey Reggio's *Qatsi* film trilogies (1982, 1988, 2002) and in John Akomfrah's video *Purple* (2017) to build a tapestry of global images which convey the pace and variety of human and nonhuman life, especially in contrast to modern industrial and technological systems. Scholars and critics use the term "lifting the veil" when writing about director Reggio's pioneering film style.

study have achieved these metrics. But does their art include or inspire advocacy or activism? Only Brice and Pinsky include concrete politicized action in their public work—there is an opportunity to sign petitions and write letters. At Somerset House, the public was invited to advocate by contributing their own aphorisms to the electronic signs. Exit surveys at a few exhibitions⁹ indicated that most visitors were already knowledgeable about climate change, but that the exhibition pushed their awareness, made them feel something that they had not before, and illuminated the urgency of the problems.

Accessibility is a key factor in spreading awareness and creating a forum where activism may take root. Who is the audience for the artworks discussed here? I would venture to say primarily middle-class to affluent westerners, and those viewers who hail from the Global South who possess a measure of socioeconomic stability. Who then is left out of the discourse? The poor and disenfranchised whose communities bear the brunt of the worst effects of climate change and environmental degradation. The art may advocate for their benefit, but they will likely never see it. Because this group is presently powerless to change the global climate regime, the audience that my artists do reach is appropriate, given their potential to effect change.

Different contexts, venues, and sponsors play a large role in the production and reception of ecoart. At the Venice Biennale, *Sun and Sea* was shown in an international art context. Tens of thousands saw the performance. But these visitors constitute an elite group—art-informed, curious, and receptive to avant-garde art with a sociopolitical agenda. The global tour of *Sun and Sea* has enabled reaching a more diverse audience; the urban venues (some not affiliated with art) are more easily accessed and

⁹ *In Real Life* at the Tate Modern, *Moving Off the Land II* in Venice, and *Sun and Sea (Marina)* in Venice.

ticket prices are significantly lower.¹⁰ *Pollution Pods* has been presented at the sites of global climate summits, most recently at the UN Climate Change Conference (COP26) in Glasgow. Here too, visitors were primed to learn and engage with climate issues, including stepping into the pods. Brice's outdoor signs have been funded and commissioned by a number of public and private organizations in the United States and abroad. The collaboration among several stakeholders validates the importance of his work and widens its reach in terms of visitation and educational programming. In the New York City parks, the aim was to reach passersby who were not primed for an aesthetic experience. The number of visitors was impressive, but how many walked by without paying attention? The location of Pinsky and Brice's public-facing work removes obstacles of inaccessibility, price, and perceived elitism. Other sites such as the Somerset House courtyard, though public, draw a more limited crowd. Pinsky and Brice were commissioned to exhibit there on Earth Day in 2018 and 2019 respectively, and the attendant publicity significantly enlarged the crowds. Burtynsky's *Anthropocene Project* will tour internationally for five years, and its educational partnership with the Royal Canadian Geographical Society provides guides and lesson plans for 23,000 classroom teachers across Canada.

Since feelings, emotion, and cognition are neurologically linked as per Damasio's theory of somatic markers, we may judge another kind of success by the emotional response of visitors. Again, this can be measured by exit surveys and eye-tracking. There are online videos that attest to the engagement and emotional impact of

¹⁰ At the Brooklyn Academy of Music, ticket prices started at \$25.00. Some non-traditional and unpretentious venues include the former Vilnius (Lithuania) Taxi Park (December 2021) and The Budd, a former automobile parts factory in Philadelphia (October 2021).

Pollution Pods and *The Anthropocene Project*. One writer was moved to narrate her emotional journey through all ten of Brice's *Climate Signals*. Another measure of emotional impact can be found in a few quantitative studies, notably those by Climart and other psychologists who have examined participants' emotional responses to different genres and contexts surrounding climate change art.¹¹

Of all the works discussed, Burtynsky's is the most universally understood, most aesthetically appealing, most transparent in its representations, and the most powerful as a visual tableau. Though the toxic sublime aestheticizes despoliation, and does not address the long-term issues associated with extraction, exploitation, and dispossession, it does offer a truthful panoptic picture. To recycle a cliché, seeing [Burtynsky] is believing. There is nothing to "see" of planetary ecological disruption in *Pollution Pods* or *Sun and Sea*, and that may make them less instrumental for people who depend on sight to reveal truths. Brice originally privileged sight and photography as markers of earth's transformation, but the dissolution of that realism into abstraction may dilute its power for some viewers. It succeeds on a deeper, more symbolic level for those who are willing to invest the time in decoding those abstractions and ironies in media and message. Alternately, his LED signs easily attract and retain all types of viewers who then respond to bold, clever eco-aphorisms. Of course, the prints are intended for astute gallery visitors, and the signs, for the general public. As a committed artist activist devoted to shifting awareness of the issue, Brice successfully anticipates different levels of sophistication in his audiences and aptly modifies his media and strategies. Burtynsky does the same, offering options of photography, film, AR and VR.

¹¹ See the Climart research project description at <https://www.climart.info/about>.

Sun and Sea's indirect, casual, laissez-faire attitude toward global warming is profound for those who recognize themselves as apathetic actors in a doomsday trajectory. They catch on to the non-linear narratives and rhythms, the metaphors of biological flux between humans and nonhumans, and the ambiguities and paradoxes of living comfortably in an anthropocentric world which devalues and commodifies nature. However, there are spectators who are not moved either emotionally or intellectually. Initially intrigued by the novel bird's eye view of nearly naked bodies, the mix of musical harmony and discord, and the quotidian relatable actions, they become bored with the lack of dramatic action and cryptic (if any) message. The piece deserves critical acclaim for taking on a topical, urgent issue in the least rhetorical, least obvious of ways, but for a minority, the work is inscrutable. Compared to the other works in this study, *Pollution Pods* provides the most visceral, indisputable knowledge about the causes of climate breakdown, specifically, the varieties and inequities of global air pollution. *Pods* is a consuming experience from the aesthetic enticement of the exterior to the assault on the senses in the interior. The real time atmospheric data equipment in each pod will appeal to the skeptics, or those who learn best from the integration of art and science. Both global and local, it merges empirical data with grounded phenomenological experience. If communal conversation is a step on the ladder to policy change, *Pollution Pods* succeeds more than the others in fostering those conversations because inside the pods, visiting world leaders, activists (Greta Thunberg), and regular citizens alike share physical sensations, make comparisons between cities, and discuss the connections between pollution and public health. *Pollution Pods* rubs up against climate politics in very immediate ways.

Looking at the full spectrum of ecoart practices around the world, practical success is achieved when the art is able to influence communities to stop a land use project, or leads to changes in local or federal environmental regulations and ordinances, or helps establish new progressive ones. Such examples are few and far between. None of the artwork in this study can claim these accomplishments. But whether picturing, visualizing, feeling, or acting out the uncertainties and risks of the climate crisis, the work makes us think more critically about the disruption that corporations, the military, political regimes, land development, and tourism are having on the ecosystem. Urgency can be conveyed through both screams and whispers.

New Avenues to Consider

Viewer/audience response to climate crisis-themed art is an under-researched field, both qualitatively and quantitatively. Ecoartists, environmental historians, and curators would be wise to follow the emerging subfield of empirical ecocriticism that focuses on the empirically grounded study of environmental narrative and its influence.¹² At this point in time, the bulk of these studies have been done in literature, film, and television.¹³ More studies of ecoart's impact are needed, whether it is

¹² See A. Keller, L. Sommer, C.A. Klöckner, and D. Hanss, "Contextualizing Information Enhances the Experience of Environmental Art," *Psychology of Aesthetics, Creativity, and the Arts* 14, no.3 (2020): 264–275; L.K. Sommer and C.A. Klöckner, "Does Activist Art Have the Capacity to Raise Awareness in Audiences?—A Study on Climate Change Art at the ArtCOP21 Event in Paris," *Psychology of Aesthetics, Creativity, and the Arts* 15, no.1 (2021): 60–75; Alexa Weik von Mossner, *Affective Ecologies: Empathy, Emotion, and Environmental Narrative* (Columbus: Ohio State University Press, 2017); D.J. Curtis, N. Reid, and I. Reeve, "Towards ecological sustainability: observations on the depiction of environment through art," *SAPIENS* 7, no.1 (2014); M. Marks, L. Chandler, and C. Baldwin, "Re-imagining the environment: using an environmental art festival to encourage pro-environmental behaviour and a sense of place," *Local Environment*, 21, no.3 (2016): 310-329.

¹³ See the previous discussion of theories by Mossner (2014) and Antunes (2016 and 2018) in chapter 2.

presented in museums, galleries, or public spaces. A work's effectiveness on many levels, and for diverse audiences, should be a key factor in its selection for exhibitions, public commissions, and placement at the seat of governments.

Formal ecoart pedagogy can now be incorporated into university curricula to help hasten a paradigm shift.¹⁴ This pedagogy will stress the confluence of art, science, and community in creating practical solutions to critical environmental challenges.

Traditional art and art history teaching paradigms will be jettisoned or expanded by emphasizing process over product, collective action over the autonomous artist, the banishment of a humancentric approach, the use of biodegradable art materials, and issues of environmental injustice. This approach can mirror the interconnectedness of our healing ecosystem.

As of early 2022, climate breakdown has not abated, nor has there emerged an international consensus on practical measures to curb fossil-fuel emissions.¹⁵ How will ecoartists continue to meet this challenge? In order for their art to have maximum impact, it should move out of the discreet realm of Art and infiltrate public culture at large. There must be a steady stream of unsettling climate narratives such as those featured here to unhinge apathy. The art must work "fast and slow." Serious ecoartists

¹⁴ Amara Geffen, Ann Rosenthal, Chris Fremantle, and Aviva Rahmani, *Ecoart in Action: Activities, Case Studies, and Provocations for Classrooms and Communities* (New York: New Village Press, 2022).

¹⁵ The COP26 in Glasgow, is considered only a partial success. For details of its successes and failures see Alice C Hill, "What COP26 Did and Didn't Accomplish," Council on Foreign Relations newsletter, Nov. 15, 2021, <https://www.cfr.org/in-brief/cop26-climate-outcomes-successes-failures-glasgow> and "Recap of COP26: Key Outcomes and What Comes Next Briefing Series on the U.N. Climate Change Conference in Glasgow," Environmental and Energy Study Institute, Nov. 18, 2021, <https://www.eesi.org/briefings/view/111821cop26#:~:text=At%20COP26%20there%20was%20a,unabated%20fossil%20fuels%20next%20year.>

do not separate themselves from their ecologically compromised world. More and more of them are working collaboratively across disciplines, and are seated at the planning table of local and global community projects, to forge zones of interconnectedness between vulnerable organisms, both human and nonhuman.

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