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BOTANICAL VISUALITIES: MEDIATING HUMAN-PLANT RELATIONALITY IN AN AGE OF ENVIRONMENTAL COLLAPSE

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

DOCTOR OF PHILOSOPHY

in

VISUAL STUDIES
with an emphasis in FEMINIST STUDIES

by

Matthew Harrison Tedford

June 2026

The Dissertation of Matthew Harrison Tedford
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Vice Provost and Dean of Graduate Studies

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2026

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Abstract

Botanical Visualities: Mediating Human-Plant Relationality in an Age of Environmental Collapse

Matthew Harrison Tedford

This dissertation investigates how contemporary screen-based media—documentary film, animation, and virtual reality—represent and reconfigure human–plant relationships in the context of ecological crisis and dominant humanist paradigms. It asks whether technologically mediated images of the botanical world can foster multispecies visuality that is embodied, ethical, and relational, or whether they inevitably reproduce the disembodied gaze of modernity. To address these questions, the study adopts an interdisciplinary methodology grounded in ecocritical art history, ecomedia, Indigenous and feminist theory, and critical plant studies. Through close visual analysis and comparative interpretation, it examines works by Suzanne Husky, Lisa Jackson, Miwa Matreyek, and Amanda Strong. These case studies are paired with theoretical frameworks from posthumanism, ecofeminism, and feminist science and technology studies to interrogate the intersections of visuality, embodiment, and multispecies ethics. The findings reveal that while dominant visual regimes—such as those exemplified by blue-chip nature documentaries—reinforce anthropocentrism and mastery, alternative practices mobilize technological mediation to cultivate relational and embodied engagements with the botanical world. Experimental documentary film and animation foreground multispecies collaboration and epistemic humility, while virtual reality offers speculative spaces for care and continuity rather

than escapist simulation. Across these media, the dissertation argues that technology is not inherently antithetical to authenticity or relationality; rather, its ethical and ontological value depends on the kinds of relationships it enables and the worlds it helps bring into being. Ultimately, the study concludes that care—understood as an embodied, multispecies ethic—bridges the virtual and the concrete, positioning screen-based media as a vital site for imagining ecological futures.

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This project is possible because of the generous support I received from the Arts Dean's Fund for Excellence and Equity, the Bhojwani Family Endowed Graduate Fellowship, the Florence French Scholarship, the Ford Graduate Fellowship, the Graduate Dean's Research Travel Grant, the Louis and Sarah Sloss Graduate Fellowship, the Mellon Graduate Student Success Fellowship, the National Humanities Center Graduate Student Summer Residency, the Regent's Fellowship, and the Visual Studies Travel & Research Grant. The Feminist Media Histories Initiative Summer Fellowship, the Creative Ecologies/Sawyer Seminar Fellowship, and the President's Dissertation-Year Fellowship were especially crucial in jumpstarting and completing this project.

My sincere thanks go to the artists whose work I write about in these pages. Their practices inspired and challenged my thinking at every turn, and I am grateful for the conversations, interviews, and insights they shared with me. I also wish to thank the staff at PHI in Montreal for facilitating access to artwork essential to this project. An early version of one of this dissertation's chapters appeared in *Feminist Media Histories*, and I thank Jennifer M. Bean, Debashree Mukherjee, and Pavitra Sundar for their thoughtful engagement and encouragement.

And finally, thank you to Kristen, who has been on this journey with me from its inception, and Nessa, who joined us along the way. Without your constant encouragement, support, and love, I would have neither started nor finished this dissertation.

Introduction

In the opening scene of Lisa Jackson's virtual reality (VR) experience *Biidaaban: First Light* (2018), a tree grows out of the concrete floor of a flooded Toronto subway tunnel. Moss and lichen creep across the walls and ceiling, reclaiming the space and signaling profound change to this place. A canoe rests beside the tracks, suggesting not abandonment but continuity—an ancient technology nestled within a modern ruin, experienced with the aid of a high-tech headset. This image encapsulates the central tension of this dissertation: the uneasy—but, as I will argue, extremely generative— relationship between organic life and technological mediation, between multispecies relationality and mechanistic visuality. Through screen-based media, I contend, contemporary artists are reimagining plant-human relationships in ways that challenge the extractive logic of modernity. These works do not simply depict plants; they engage with them as collaborators, epistemic agents, and co-creators of meaning. What do we make of technologically mediated images of the botanical world, such as this scene from *Biidaaban*? Can technological mediation foster a visuality that is multispecies-centered, embodied, and ethical? Or does it inevitably reproduce the disembodied gaze of modernist humanist epistemology?

This dissertation investigates these questions by considering the representation of human-botanical relationships in visual art and media projects during the first two decades of the twenty-first century. Particularly, the project is concerned with how Indigenous and feminist ontologies of multispecies relationality are articulated at a time of deep ecological crises. These crises are popularly defined by global climate

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change, mass extinction, deforestation, and environmental racism. However, this project interprets these conditions as symptoms of a larger ecological crisis of humanism, instrumentalization, and anthropocentrism, failures of relationality which are materialized in capitalist and colonial orders. This project explores how social and political affairs—especially climate change and decolonial and feminist political movements—intersect with the production of visual culture in this era. Specifically, this dissertation intervenes in existing scholarship by foregrounding multispecies relationality and critiques of humanism in ecomedia and ecocritical art history while attending to a deficit in research on plant-human relations in multispecies visual culture inquiry. The dissertation's subtitle telegraphs that while the early-twenty-first century is *an* age of environmental collapse, it is neither the first nor the only one. Within many of the knowledge traditions I draw on, particularly North American Indigenous ones, environmental collapse has a long history, extending at least to the beginning of European colonization. For many ecologists and economic historians, the dawn of European rationalism or capitalism—both dated at various points in the early modern period—marks the beginning of the current crises. While this dissertation is grounded in the contemporary moment, it is always attentive to the historical antecedents of this era.

The project focuses on three primary media—experimental documentary film, animation, and VR—pairing each with select thematic concerns that address various aspects of plant-human relationality. Respectively, these themes are plants as teachers, plants and embodied practices, and caring relationships with plants. My

focus on screen-based media opens a series of questions on the use of technology to mediate organic relations, allowing for a nuanced exploration of representation, embodiment, materiality, and how dominant power structures shape visual media. To answer my central research questions, I bring together work by Jackson (Anishinaabe; Canada), Suzanne Husky (US/France), Miwa Matreyek (US/Japan/Canada), and Amanda Strong (Michif/Métis; Canada). These artists represent a diverse range of practices and perspectives, and by placing them in conversation with one another, I aim to resist positing a unitary experience of human-plant relationships while nonetheless accounting for convergences and participation in shared conversations. I selected these artists because this dissertation emerged directly from my encounters with their work. The questions at the heart of the project about botanical relationality and technological mediation arose first from seeing these artworks and recognizing the distinct, multispecies visual strategies they enact. Their approaches to botanical relationality, therefore, form the conceptual ground from which the project itself grew.

Background

Across the domains of Indigenous knowledge, ecofeminism, and feminist science and technology studies (STS), theories about the relational nature of being cross the species boundary and radically challenge dominant post-Enlightenment ideologies. Potawatomi philosopher Kyle Whyte argues that the significance of *relationships*—so prevalent in widespread and distinct Indigenous worldviews—is

bound up in the "responsibilities incumbent on the parties to the relationship." To even be in a relationship, he clarifies, "is to have responsibilities toward the others in the relationship."[1] What this means is not just that responsibility is an important feature of relationality, but that it is *the* defining characteristic. Thus, to be in a relationship with another being is always an ethical state. To *be* is to be responsible. As Whyte explains about the relationship between Wabanaki women and berry plants, "an entire system of responsibilities is embedded in and permeates everything about the berry plants."[2] This extends not just responsibility but specific and intricate systems of responsibility to the heart of being, with the consequence that threats to these systems become threats to being itself. As I interpret Whyte's argument, because systems of responsibility are inherent to being, then crises like climate change pose an ontological threat to those like Indigenous women. From this, we can see that climate breakdown itself is a failure of relationality.

In her critique of the dualisms of European philosophy and atomistic individuation of entities, ecofeminist philosopher Freya Mathews proposes to define entities by their inter-relations with others.[3] In her example, a blue whale cannot be

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[1] Kyle Powys Whyte, "Indigenous Women, Climate Change Impacts, and Collective Action," *Hypatia* 29, no. 3 (Summer 2014): 602, https://doi.org/10.1111/hypa.12089.
[2] Whyte, "Indigenous Women," 603.
[3] Critiques such as Mathews' are often directed at the Cartesian mind/body dualism and the rationalist tradition that followed in large part from René Descartes' thought. But this kind of dualistic thinking extends much further back in European intellectual history. In her critique of dualism in *Feminism and the Master of Nature,* Val Plumwood charts this manner of thought at least as far back as Plato and his reason/body, reason/emotion, and universal/particular dualisms. But in addition to Descartes and Plato, Plumwood cites others with varying intellectual and political allegiances, such as Hegel and Rousseau's public/private, male/female,

defined without mention of krill. The whale's anatomy, she writes, "is only an outward reflection of its constitutive relationship with tiny krill." The blue whale, she concludes, is "a creature whose entire being is a reference to krill."[4] Likewise, for Mathews and other ecofeminists, human identity is also "constituted, through and through, by its relations with other species."[5] Following from these diverse yet interconnected perspectives, this dissertation considers currents in decolonial, feminist, and ecologically oriented thought as manifested and creatively negotiated in early-twenty-first-century film and media arts. Ecomedia approaches are especially suited to attend to the relationality that, as I argue, is inherent to media, allowing for a complex consideration that does not fall back on a stark nature versus technology divide.

Significance

While offering important and much-needed attention to human-animal encounters, the so-called "animal turn" in humanities and ecocritical arts research has

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universal/particular, and reason/nature dualisms; and Marx's freedom/necessity, culture/nature, civilized/primitive, mental/manual, and production/reproduction dualisms. We can conclude from these histories that dualism is not its own philosophical framework but rather a trait common among much, even conflictual, European thought from ancient to contemporary times. Val Plumwood, *Feminism and the Mastery of Nature* (London: Taylor & Francis Group, 1994), 45.

[4] Freya Mathews, "The Dilemma of Dualism," *Routledge Handbook of Gender and Environment*, edited by Sherilyn MacGregor (Abingdon and New York: Routledge, 2017), 60.

[5] Mathews, "The Dilemma of Dualism," 61.

dominated discourse regarding relationships with the nonhuman world.[6] Anthropocentrism is perhaps at play in the disproportionate consideration given to animals, as this is the biological kingdom to which humans belong, and thus, there are seemingly greater similarities. There remains, however, much scholarship, particularly in the visual arts, to be done regarding encounters with plants, fungi, bacteria, and the non-organic.[7]

The botanical is often apprehended in art historical and visual culture

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[6] Though this terrain is far too large to exhaustively cite, some noteworthy examples include *The Open: Man and Animal* (2003) by Giorgio Agamben; *The Animal That Therefore I Am* (2006) by Jacques Derrida; the work of Donna J. Haraway, notably *When Species Meet* (2007); *Insect Media: An Archaeology of Animals and Technology* (2010) by Jussi Parikka; *Artist Animal* (2013) by Steve Bake; and *Art and Animals* (2011) and *Speculative Taxidermy: Natural History, Animal Surfaces, and Art in the Anthropocene* (2018) by Giovanni Aloi. Titles in animal-focused humanities are as diverse as *Aesop's Anthropology: A Multispecies Approach* (2015) by John Hartigan Jr., *Victorians and Their Animals: Beast on a Leash* (2018, ed. Brenda Ayres), and *Bees in Early Modern Transatlantic Literature* (2020) by Nicole A. Jacobs.

[7] While the terms *vegetal* and *botanical* are often used interchangeably in critical plant studies, I choose the latter term for this project because of its more expansive connotation. While *vegetal* evokes edible plants, *botanical* calls to mind the wider study of all plant life, despite its Greek etymological root—*botanē* meaning pasture—also referring to consumption. And though the field of botany is primarily associated with the domain of plants, both historically and in some contemporary instances, it is also associated with fungi and algae, which in the popular imagination are often associated with plants. For example, the International Botanical Congress, which conducts the formal naming of botanicals, is responsible for plants, fungi, and algae. One challenge of this project is that the word *plant* has both scientific and popular meanings. Invoking this term may implicitly acquiesce to the scientific division of life, which is problematic in a project concerned with fuzzy boundaries and critical of humanistic discourse (including humanistic science). While still bound to these histories, the introduction of the term *botanical* allows for the discussion of, for example, lichen which are often described as "plant-like" and are especially relevant here because all lichen are multispecies relationships between fungi and algae. *Botanical* gives grounding to this project without over-defining its scope.

scholarship through a number of prisms. For example, with botanical paintings, plants are often considered as objects of study or contemplation. In these cases, there is a close relationship between the visual object and the scientific knowledge that it represents. The botanical serves as a background loaded with symbolism in Western landscape painting, such as dead trees symbolizing *vanitas* and mortality in Romanticism. In contemporary art, plant life commonly functions as a material, ranging from the temporary sculptures of Andy Goldsworthy to bioart and reclamation art practices. This dissertation, however, takes as its subject the idea of relationality among and between plants and humans, as well as among and between plants and other nonhuman beings. That is to say, I am concerned not with projects that take plants as material, setting, or taxonomy, but with those that address plants as agents who exist in relationship with other beings. Of course, these categories are neither strict nor exclusive. In the artworks I engage with in the dissertation, plant life is occasionally used as material or setting. In these works, however, plant life also takes on the role of characters, knowledge holders, actors in relationships, and co-constituting agents.

The project intervenes in a number of important and timely discussions. At the heart of the dissertation are questions concerning both humanism and posthumanism. The humanism of the European Enlightenment posits a self that is discrete and independent of other humans, and especially of the nonhuman world. Rosi Braidotti defines the Human of Enlightenment humanism as "a systemized standard of recognizability – of Sameness – by which all others can be assessed, regulated and

allotted to a designated social location."[8] This standardization of bodies and selves that developed in early modern Europe became fundamental to the ideologies and abstractions of capitalism and colonialism. As legal scholar Brenna Bhandar writes, "This reductively economistic view of human life that was directly related to the value of land was at the same time racial and gendered in its conceptualization."[9] An understanding, then, of the relationships and enforced divisions across species boundaries illuminates the utility of the human/nonhuman binary of humanism to systems of power and domination.

Posthumanism has developed as an alternative to these problematics of humanism. While there is much to be gained from the post-anthropocentric perspective of posthumanism, it is not without its shortcomings. As I read posthumanism, there is at times an implicit belief (especially in techno-utopian circles) that the human can transcend one's material being, which itself is a kind of transhumanism that seems to revert to humanism's ideology of the uniqueness of humankind. Kate Soper, an environmental philosopher who is both critical of and sympathetic to posthumanism, writes similarly that posthumanism "is better seen as a re-imagining of what it means to be human, than as an attempt to go beyond human

[8] Rosi Braidotti, *The Posthuman* (Cambridge, UK: Polity Press, 2013), 26.
[9] Brenna Bhandar, *The Colonial Lives of Property: Law, Land, and Racial Regimes of Ownership* (Durham: Duke University Press, 2018), 43. Other helpful approaches to understanding the economization of life and land, include the Marxist theory of abstract labor and decolonial approaches, such as Glen Sean Coulthard's, that posit the dispossession of land as central to the development of capitalism and colonialism.

exceptionalism."[10] This dissertation, then, grapples with questions of decentering the uniqueness of the human while resisting the humanist temptation of transcendence and exceptionalism. Multispecies posthumanisms come closest to achieving this balance. This project is therefore especially suited to address these questions because the artistic practices researched provide nuanced perspectives on the relationship between the human and the botanical that resist both the ideas of indistinguishability and separateness. In Amanda Strong's 2018 stop-motion film, *Biidaaban (The Dawn Comes)*, for example, a cadre of human, nonhuman animals, plants, and spirits cooperate to enact the Anishinaabe cultural practice of making syrup from sugar maples, with the film highlighting the human character's unique role and, at the same time, their reliance on other beings. Suzanne Husky's 2019 documentary, *Which Plants to Teach Ethics to Artificial Intelligence*, likewise recognizes different roles for plants and humans (and technology) in the realms of knowledge and ethics, but it also suggests a necessary exchange and engagement between these forms of life.

The questions posed by this dissertation also take on heightened scholarly and political significance in light of climate breakdown. The quality of relations with the nonhuman world, as well as the potential for different sorts of relationships, is fundamental to addressing ecological crises and the ideologies that fuel and perpetuate them. Likewise, the definition of the human and the abstraction and instrumentalization of human beings are foundational to these same ideologies of

[10] Kate Soper, "The Humanism in Posthumanism," *Comparative Critical Studies* 9, no. 3 (October 2021): 375, https://doi.org/10.3366/ccs.2012.006.

exploitation. These concerns have been expressed in a growing number of art exhibitions in recent years that engage to some degree with botanical intersubjectivity, or related themes, such as nonhuman subjectivity and animism. Examples include *Animism* (multiple venues, 2010-2014), *dOCUMENTA (13)* (2012), *Rights of Nature* (Nottingham Contemporary, 2015), *Big Botany: Conversations with the Plant World* (Spencer Museum of Art, 2018), *Screen City Biennial* 2019 (Stavanger, Norway), *Arboreal* (Slash Gallery, 2021), *Science Friction: Living Among Companion Species* (Centre de Cultura Contemporània de Barcelona, 2021), *Power of Plants* (MANK Galéria, 2021), *No Humans Involved* (Hammer Museum, 2021), *Plants Now!* (Vielmetter Los Angeles, 2022), *Presence of Plants in Contemporary Art* (Isabella Stewart Gardner Museum, 2023), *Hilma af Klint: What Stands Behind the Flowers* (Museum of Modern Art, 2025), and *Science/Fiction – A Non-History of Plants* (Foto Arsenal Wien, 2025), among others. Despite this long list of recent exhibitions, outside of the exhibition format, the role of botanicals—particularly in contemporary media and emerging media practices—is acutely under-researched at this moment.

Position within Existing Scholarship

Despite the growing presence of botanical themes in contemporary exhibitions, there remains a notable absence of sustained scholarly engagement with screen-based media within art historical discourse. This gap necessitates new research with an interdisciplinary approach that draws from ecocritical art history, ecocinema

and ecomedia, Indigenous art, feminist theory, posthumanism, and critical plant studies to expand the scope of art history and address the complexities of multispecies visuality. A number of scholarly contributions stand out. Alan Braddock and Cristoph Irmscher's 2009 anthology, *A Keener Perception: Ecocritical Studies in American Art History*, is one of the few early texts to systematically engage with art history's place within the burgeoning field of ecocriticism. Braddock and Irmscher write that an ecocritical art history "can contribute to a broader re-imagination of environmental relations, responsibilities, and possibilities facing our planet today." For them, this is accomplished through an emphasis on "environmental interconnectedness, sustainability, and justice in cultural interpretation," ultimately challenging the "entrenched speciesism" that "has long governed" both art history and other humanistic disciplines.[11] My project inherits and advances from these concerns—especially regarding interconnectedness and speciesism. However, the essays collected in the volume largely leave questions of humanism and its environmental impact untouched. In a more recent text, *The Ecological Eye: Assembling an Ecocritical Art History*, art historian Andrew Patrizio sets out to sketch a history of ecocritical art history as well as a potential future for the discipline.[12] Similar to my project, Patrizio specifically considers methodological approaches emerging out of ecofeminism and posthumanism. While rich in methodological propositions, the book

[11] Alan C. Braddock and Christoph Irmscher, "Introduction," *A Keener Perception: Ecocritical Studies in American Art History* (Tuscaloosa: University of Alabama Press, 2009), 3-4.
[12] Andrew Patrizio, *The Ecological Eye: Assembling an Ecocritical Art History* (Manchester: Manchester University Press, 2020).

is in many ways a survey. For example, the section dedicated to the place of the botanical in ecocritical art history is a scant four pages at the end of the book. This dissertation builds on Patrizio's work by asking how botanicals in animation, film, and VR challenge anthropocentrism in different ways than nonhuman animals, and how these visual strategies contribute to a multispecies or non-anthropocentric model for media visuality.

Like this dissertation, curator Linda Weintraub's *What's Next? Eco Materialism & Contemporary Art* explores that dialogue between contemporary artists and material feminism, among other fields of inquiry, such as new materialism.[13] Weintraub's project is centrally focused on resources and materiality, offering limited engagement with the questions of subjectivity, relationality, and humanism that occupy my project. Art historian Kate Mondloch explicitly explores the conversation between material feminism and media arts in her book *A Capsule Aesthetic: Feminist Materialisms in New Media Art*. This dissertation is influenced by Mondloch's concept of "a capsule aesthetic," which she defines as "an artistic engagement with the notion of human experience as an ever-changing intermingling of the human and nonhuman, the material and immaterial, the social and physical."[14] Though her primary focus is on technology rather than multispecies relationality, *A*

[13] Linda Weintraub, *What's Next? Eco Materialism & Contemporary Art*. (Bristol, UK: Intellect, 2019).
[14] Mondloch uses the metaphor to "evoke something that encases while remaining fundamentally mutable in the process." Kate Mondloch, *A Capsule Aesthetic: Feminist Materialisms in New Media Art* (Minneapolis: University of Minnesota Press, 2018), 105–6.

Capsule Aesthetic is a model for this project. I pair this concept with what art historian T.J. Demos calls, in his book *Beyond the World's End: Arts of Living at the Crossing,* "creative ecologies;" that is, "practices that make new sensible materializations and connections (aesthetic, practical, jurisgenerative) between otherwise discrete realms of experience and knowledge, and that cultivate just worlds to come."[15] Demos' *Decolonizing Nature: Contemporary Art and the Politics of Ecology* is also a key precedent for this project because of the way it foregrounds some of the same decolonial concerns as this dissertation from an ecocritical art history perspective (including one chapter that critically addresses artists' experimental gardens as a model of political ecology in the arts).[16] In this context, I examine the historical and material relationships between anthropocentrism, humanism, colonialism, and economy as they pertain to visual culture

The relationality that is central to this dissertation is also central to the fields of ecomedia and ecocinema. Adrian Ivakhiv, a scholar of ecocinema, describes cinema as "a machine that produces or discloses worlds." He further describes this technology as simultaneously: *anthropomorphic*, producing a cinematic version of the human; *geomorphic*, producing a spatially organized object-world; and *biomorphic*, producing "an apparent world of animate, life-like and interperceptive forms, which are shown to see and be seen, hear and be heard, at the same time as well, the

[15] T.J. Demos, *Beyond the World's End: Arts of Living at the Crossing* (Durham: Duke University Press, 2020), 18.
[16] T.J. Demos, *Decolonizing Nature: Contemporary Art and the Politics of Ecology* (Berlin: Sternberg Press, 2016).

viewers."[17] In their introduction to an anthology on ecomedia studies, Stephen Rust, Salma Monani, and Sean Cubitt similarly write that the foundation of ecomedia is an understanding that "media, society, and the environment are inextricably entangled together, both in how media texts represent the environment ... and in the inevitable ways that media texts and systems are materially embedded in natural resources and abuse."[18] These perspectives inform this dissertation, especially in the ways they treat the relationality and affectability of media, which aids my exploration of the screen and technological mediation of plant-human relations. I also consider how different theorizations of technology—including Indigenous approaches, STS, corporate, and colloquial usages—frame discourse on the relationship between media, viewers, the body, and the nonhuman.

Much scholarship within ecocritical art history and ecomedia is concerned with questions of sustainability in art and Anthropocene discourse, such as *Form, Art, and the Environment: Engaging in Sustainability*, by Nathalie Blanc and Barbara L. Benish, and the anthology *Artistic Visions of the Anthropocene North: Climate Change and Nature in Art*, edited by Gry Hedin and Ann-Sofie N. Gremaud.[19] While

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[17] Adrian Ivakhiv, "An Ecophilosophy of the Moving Image: Cinema as Anthrobiogeomorphic Machine," *Ecocinema Theory and Practice: Theory and Practice*, eds. Stephen Rust, Salma Monani, and Sean Cubitt (London: Taylor & Francis, 2012), 88.
[18] Stephen Rust, Salma Monani, and Sean Cubitt, "Introduction: Ecologies of Media," *Ecomedia: Key Issues,* eds., Stephen Rust, Salma Monani, and Sean Cubitt (London: Taylor and Francis, 2015), 2.
[19] Nathalie Blanc and Barbara L. Benish, *Form, Art, and the Environment: Engaging in Sustainability* (London: Routledge, 2016); Gry Hedin and Ann-Sofie N. Gremaud, eds., *Artistic Visions of the Anthropocene North: Climate Change and Nature in Art* (London: Routledge, 2018).

the climate crisis is an important background to my dissertation, the works I investigate do not principally address climate change itself. The questions of this dissertation are more frequently addressed within the fields of Indigenous art and media criticism. For example, in Salma Monani and Joni Adamson's anthology *Ecocriticism and Indigenous Studies: Conversations from Earth to Cosmos*, several scholars investigate multispecies relations, and the ontological and ethical concerns of my dissertation run throughout much of the anthology.[20] Where it does appear, research on the nonhuman in visual culture has often favored nonhuman animals over plants and other non-animal forms of life. In some cases, the term *nonhuman* seems to be used synonymously with *nonhuman animal*. Even in its title alone, for example, the 2016 anthology *Screening the Nonhuman: Representations of Animal Others in the Media*, edited by Amber E. George and J.L. Schatz, enacts the collapsing of the nonhuman with nonhuman animals, to the exclusion of plants and other forms of life and matter.[21]

Though there is a paucity of research that considers plant-human relationality in visual arts, this is nonetheless an area of research with an audience and a developing scholarly apparatus. This dissertation engages with the small but emerging field of critical plant studies (CPS). The academic press Brill publishes a series titled *Critical Plant Studies: Philosophy, Literature, Culture*, edited by

[20] Salma Monani and Joni Adamson, eds., *Ecocriticism and Indigenous Studies: Conversations from Earth to Cosmos* (New York: Routledge, 2016).
[21] Amber E. George and J. L. Schatz, eds., *Screening the Nonhuman: Representations of Animal Others in the Media* (Lanham, MD: Lexington Books, 2016).

philosopher Michael Marder.[22] In 2020 and 2021, *Antennae: The Journal of Nature in Visual Culture* published three issues on the theme of "vegetal entanglements." In 2025, two issues of *Antennae* were published on the theme of "gardening." The founder and editor-in-chief of *Antennae*, art historian Giovanni Aloi, has written extensively on plants and visual art. Spanning millennia and numerous cultures, Aloi's most recent book, *Botanical Revolutions: How Plants Changed the Course of Art* (2025), takes a global look at the role of plants in transformative moments in art history.[23] While the above research is useful to my research, my project takes a different approach. I contribute to this field by bringing a sustained focus on contemporary screen and emerging media, which is largely untouched in current CPS research, even that which is focused on visual culture. This dissertation not only broadens the scope of media considered within CPS, but in doing so, it advances important research on mediated relationships with plants. This dissertation also complements existing feminist and decolonial CPS research, which is not primarily focused on the visual, by taking into account the politics of visuality. It is essential to attend to the aesthetics and politics of screen media given its pervasiveness in

[22] Though not exclusively focused on the visual arts, the series has included *Why Look at Plants? The Botanical Emergence in Contemporary Art* (2018, ed. Giovanni Aloi), *The Plant Contract: Art's Return to Vegetal Life* (2018) by Prudence Gibson, *Forest Family: Australian Culture, Art, and Trees* (2018, eds. John C. Ryan and Rod Giblett), and *Media, Modernity and Dynamic Plants in Early 20th Century German Culture* (2016) by Janet Janzen. Aloi and Gibson offer only surveys of contemporary practices, and Ryan and Giblett and Janzen diverge significantly from my project in subject matter.

[23] Giovanni Aloi, *Botanical Revolutions: How Plants Changed the Course of Art* (Los Angeles: Getty Publications, 2025).

contemporary society—from film and television to social media to the explosion of generative AI, which is largely engaged with via screens.

Beyond the specific intersection of CPS and visual culture, this dissertation is meant to be legible within the various disciplines within which it is situated. Within feminist, decolonial, and STS research, considerations of human relationships outside of the animal kingdom are greater than in current visual studies research considered more broadly. Deboleena Roy's r process-based ontology, articulated in *Molecular Feminisms: Biology, Becomings, and Life in the Lab*, is foundational to my thinking about forms of difference that are non-oppositional and allow for non-dominating engagement and allyship.[24] Anna Tsing's *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins* offers a model for an anthropology that takes seriously human and multispecies becomings with non-animals.[25] Mel. Y. Chen dedicates an entire section of their book *Animacies: Biopolitics, Racial Mattering, and Queer Affect* to the animating and affective nature of lead and mercury in US cultural contexts.[26] The concepts of transcorporeality and material feminism, as described by Stacy Alaimo, argue for the importance of considering how the self is entangled with external material (both organic and non-organic).[27] My project builds

[24] Deboleena Roy, *Molecular Feminisms: Biology, Becomings, and Life in the Lab* (Seattle: University of Washington Press, 2018).
[25] Anna Lowenhaupt Tsing, *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins* (Princeton: Princeton University Press, 2015).
[26] Mel Y. Chen, *Animacies: Biopolitics, Racial Mattering, and Queer Affect* (Durham: Duke University Press, 2012).
[27] Stacy Alaimo, Bodily Natures: Science, Environment, and the Material Self (Bloomington: Indiana University Press, 2010).

on these frameworks by examining how their theories of relationality and interdependence take visual form in contemporary screen-based media. By focusing on botanical relations in film, animation, and VR, I show how artists translate these theoretical insights into multispecies visual strategies that challenge dominant humanist modes of seeing.

Methods and Theories

To address my research questions, I bring together theories of relationality—particularly from feminist and Indigenous discourses—with theories of technology, media representation, and artificiality. I have engaged with my research material through sustained looking, visual analysis, comparative interpretation, conducting first-person artist interviews when possible, and consulting published and recorded interviews. I have approached my research questions from the lens of ecomedia and ecocritical art history because these fields are particularly suited to attend to relationality in visual culture, since at their core is an appreciation of the inescapable relationship that is given form within aesthetic practice between media/visual culture, environment, audience, and broader society, as explained by Rust, Monani, and Cubitt above. By focusing on the botanical, this project does not intend to construct strict boundaries between, or a hierarchy among, the biological kingdoms (Animalia, Fungi, Plantae, etc.). Indeed, the very nature of this project hinges on an interweaving of these kingdoms. Acknowledging that all forms of life are dependent upon others does not necessitate a move to indistinguishability. Drawing from various feminist

thinkers—including Val Plumwood, Deboleena Roy, and Karen Barad—my methodology embraces both interdependence *and* difference and the co-constituting of subjectivities. While utilizing plant life as an entry point in these artworks, I also recognize and address other forms of life and non-life at play, such as animals, fungi, urban infrastructure, and technology.

Nonetheless, I believe that it is productive to focus this study on the botanical. Giovanni Aloi argues in his introduction to *Why Look at Plants?* that many in the field of critical animal studies avoid extending ethical considerations to plants because some animal rights discourse is built on the proximity of animals to humans, with a focus on notions such as sentience, intention, pain, and desire.[28] A focus on non-animal life challenges this anthropocentrism and requires other ethical models when considering moral obligations to other forms of life. Focusing on the botanical, then, doesn't just address a scholarly lack; it also has its own methodological advantages. Aloi and Michael Marder write in their introduction to their 2023 anthology, *Vegetal Entwinements in Philosophy and Art: A Reader*, that "the inscrutability of plants, their relatively simple anatomy and sessile existence should no longer be seen as markers of inferiority, but as fecund opportunities through which to rethink our relationship with the vegetal world, the land, and ecosystems."[29]

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[28] Giovanni Aloi, "Introduction: Why Look at Plants?," *Why Look at Plants? The Botanical Emergence in Contemporary Art* (Leiden, Netherlands: Brill Rodopi, 2018), 7.

[29] Giovanni Aloi and Michael Marder, "Introduction," *Vegetal Entwinements in Philosophy and Art: A Reader*, eds. Giovanni Aloi and Michael Marder (Cambridge, MA: MIT Press, 2023), 4.

Philosopher Giorgio Agamben writes that "the isolation of nutritive life (which commentators will already call vegetative) constitutes in every sense a fundamental event for Western science."[30] The cleaving of vegetative life from other forms of life is the first of many steps to a hierarchical division of life. These conceptual challenges tie directly to larger discussions regarding humanism and anthropocentrism from within the fields of posthumanism, ecofeminism, and material feminism.

On the question of technology, this project requires thinking beyond dualisms such as artificial/authentic, nature/culture, virtual/embodied. Rather than condemning or championing technology, my aim is to understand how multispecies relations can be facilitated and complicated by screen media *and* how dominant ideologies impact technology, platforms, and distribution systems that affect botanical relations in turn. These questions are particularly suited for analysis within ecomedia and ecocinema perspectives that account for the relationality between media, viewer, and subject. Strategies for addressing these complex relationships also include investigating the embodiment of virtual experiences—as the work of N. Katherine Hayles and María Puig de la Bellacasa help with[31]—and researching alternative models and

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[30] Giorgio Agamben, *The Open: Man and Animal* (Stanford: Stanford University Press, 2004), 14.

[31] N. Katherine Hayles, *How We Became Posthuman: Virtual Bodies In Cybernetics, Literature, and Informatics* (Chicago: University of Chicago Press, 1999); N. Katherine Hayles, "Simulated Nature and Natural Simulations: Rethinking the Relation between the Beholder and the World," *Uncommon Ground: Rethinking the Human Place in Nature*, ed. William Cronon, 409–25 (New York: W.W. Norton, 1996); María Puig de la Bellacasa, *Matters of Care: Speculative Ethics in More than Human Worlds* (Minneapolis: University of Minnesota Press, 2017).

understandings of technology, such as those from Indigenous thought. Together, these diverse methods help me investigate the larger research questions about the possibility and character of a multispecies visuality.

The inclusion of animation, film, and VR in this dissertation reflects a commitment to visual studies methodologies that embrace the fluidity of media and the evolving nature of visuality. These media forms are not only technologically mediated but also conceptually rich, offering new ways to visualize multispecies relationality. Their presence in museum and gallery contexts affirms their relevance to art history, while their temporal and immersive qualities challenge traditional modes of spectatorship. As curator Betti-Sue Hertz writes, "From an art-historical point of view, animation upends our understanding of vision and the reception of the art object, in part because it has been situated in a liminal space between painting/drawing and film."[32] This liminality allows animation—and by extension, other time-based media—to displace "the spatial and temporal codes of the static two-dimensional object," replacing them with a visuality that can foster relational, embodied, and time-based engagements, as, I will argue, do the works I engage in this project.[33] These shifts are not merely formal but epistemological, inviting new ways of seeing and relating to the nonhuman world. By incorporating these media, this dissertation contributes to a growing body of scholarship that reconsiders the role of

[32] Betti-Sue Hertz, "Handwork: Digital Flows, and Contemporary Art Animation," *Animated Painting* (San Diego: San Diego Museum of Art, 2007), 22.
[33] Hertz, "Handwork," 22.

time, movement, and technological mediation in the history and theory of art, while also foregrounding multispecies relationality and ecological ethics.

My thinking regarding relationality, multispecies encounters, and decolonial politics and aesthetics is greatly indebted to scholarship by North American Indigenous thinkers. Key figures in my research are Glen Sean Coulthard (Yellowknives Dene), Grace L. Dillon (Anishinaabe), Sherry Farrell Racette (Métis), David Garneau (Métis), Robin Wall Kimmerer (Potawatomi), Dylan Robinson (Stó:lō), Leanne Betasamosake Simpson (Michi Saagiig Nishnaabeg), and Kyle Whyte (Potawatomi). These scholars help me think about how Indigenous aesthetics function, as well as how many Indigenous ontologies and ethical systems challenge Western notions of the self or the human. Many of these thinkers are integral to any conversations regarding ethics of care and multispecies responsibility, which are central to this dissertation.

It is important to also acknowledge the argument made by Métis anthropologist Zoe Todd that the academic theories of the ontological turn, posthumanism, and cosmopolitics (and I would add ecofeminism and new materialism) can sometimes ignore or erase the Indigenous thinkers and knowledge that predates the "discoveries" of European scholars.[34] This presents a challenge for this dissertation because both Indigenous thought and Western academic thought, about which Todd writes, influence my own thinking. I understand that good

[34] Zoe Todd, "An Indigenous Feminist's Take on the Ontological Turn: 'Ontology' Is Just Another Word for Colonialism," *Journal of Historical Sociology* 29 (2016): 4–22, https://doi.org/10.1111/johs.12124.

intentions are not a remedy to the concerns of misuse, and that even thoughtful citational practices can mask the appropriation of Indigenous knowledge. As a non-Indigenous scholar, I have approached this project with humility and with an openness to self-transformation and even irreconcilability.

In a 2016 article in *Canadian Art Review*, artist and art historian Sherry Farrell Racette (Métis) asks whether "those of us within the world of Indigenous arts believe that others can easily understand the importance of images we know and love?" and whether it is "fair to expect curators to anticipate knowledge gaps and resistance? Is it even possible?"[35] These questions relating to cross-cultural legibility are recurrent in critiques of non-Indigenous writing about Indigenous artistic practices. In his book *Hungry Listening*, Robinson engages with attempts to render Indigenous music legible through "hungry listening" or settler colonial listening, which he described as a "'civilizing' sensory paradigm."[36] But rather than just focusing on the sometimes racist manifestations of this kind of listening, Robinson explains how attempts at inclusionary or cross-cultural engagement in music often reinforce the assimilative power of settler listening practices. Robinson explains how Indigenous performers "have been structurally accommodated in ways that 'fit' them into classical composition and performance systems."[37] I read this "fitting" of Indigenous

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[35] Sherry Farrell Racette, "*Tawâyihk*: Thoughts from the Places in Between," *RACAR: Revue d'art canadienne / Canadian Art Review* 41, no. 1 (2016): 29, https://doi.org/10.7202/1037550ar.
[36] Dylan Robinson, *Hungry Listening: Resonant Theory for Indigenous Sound Studies* (Minneapolis: University of Minnesota Press, 2020), 3.
[37] Robinson, *Hungry Listening*, 6.

musicians into classical music as a means of making non-Western music legible, and thus containable and controllable. Robinson argues that this demonstrates an interest in Indigenous content but not Indigenous structure. We might rephrase this to say that there is an interest in Indigenous content, but not in Indigenous ontologies, politics, or lifeways.

His critique of "inclusionary" models of collaboration notwithstanding, Robinson does not close the door on collaborations between Indigenous and non-Indigenous performers. He introduces the term "Indigenous+art music," which he says signals the "awkward, incompatible, or irreconcilable nature of such meetings" and disrupts "implications of union, hybridity, syncretism, and reconciliation." He calls the "+" in his term "the space of listening itself" that asks listeners to "attend to being between these ontologies and sound worlds."[38] What intrigues me about this formation is Robinson's simultaneous acknowledgment of the possibility of irreconcilability and the possibility for generative engagement across differences. I build on Robinson's insights not by treating Indigenous and non-Indigenous cultures as stable or oppositional categories, but by adopting his emphasis on the conditions of cross-cultural encounter. I use his notion of "the space of listening itself" to frame how these artworks invite viewers into sites of relational tension, without presuming cultural purity or sameness.

Robinson's space of critical listening itself is reminiscent of a proposal made by Racette that ethical engagement of Indigenous art from non-Indigenous writers

[38] Robinson, *Hungry Listening*, 9.

needs to be an act of self-transformation. "For if we ask people to change how they think about us," she explains, "we are also asking them to change how they think about themselves."[39] This is important because it suggests that ethical writing by non-Indigenous people is never just a matter of methodology alone, at least not in the academic sense. One's writing, listening, and viewing practices must, I contend, be part of an ongoing process of self-reflection and critique. Like Robinson, Racette believes, and I agree, there can be space for dialogue and exchange across the Indigenous–non-Indigenous divide. She introduces ethicist Willie Ermine's Cree interpretation of "ethical space" as a possible framework for beginning the process. Ermine writes that at the superficial level of the Indigenous-Western encounter, "the two entities may indeed acknowledge each other but there is a clear lack of substance or depth to the encounter."[40] What remains hidden, Ermine continues, is the undercurrent of "deeper level thoughts, interests and assumptions" that will influence any relationship between the two parties. One of the key undercurrents is a familiar one: "the brick wall of a deeply embedded belief and practice of Western universality. […] with a claim to one model of humanity and one model of society."[41] With regards to visual-cultural analysis, we can think here specifically about the frequent failure to understand and appreciate that Indigenous works of art function as forms of knowledge generation and world-making.

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[39] Racette, "*Tawâyihk*," 30.
[40] Willie Ermine, "The Ethical Space of Engagement," *Indigenous Law Journal* 6, no. 1 (2007): 195.
[41] Ermine, "The Ethical Space of Engagement," 198.

In the absence of a "God's eye view" that any group of people can claim, Ermine argues that an ethical space, "produced by contrasting perspectives on the world, entertains the notion of a meeting place, or initial thinking about a neutral zone between entities or cultures."[42] Key to such a space, for Ermine, is for one to step away from their allegiances. And while, as Racette notes, Ermine is calling for what some might charge as idealistic thinking, there are insights worth considering in the context of cross-cultural criticism. An important question that remains, however, is how to create and nurture these ethical spaces of engagement. It is also important to note that while Ermine calls for stepping away from one's allegiances within an ethical space of engagement, he is not asking for anyone to deny their own positionality. If we consider the cultural critic's work as participating in such a space, we can see how one can simultaneously acknowledge the perspectives and references they bring to their subject while resisting universalizing the selfsame. The ethical space is concerned with engagement and reconciliation but not legibility.[43] There is

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[42] Ermine, "The Ethical Space of Engagement," 202.

[43] Some Indigenous writers are highly critical of the language around reconciliation. I repeat Ermine's phrasing above to faithfully represent his writing, but it bears mentioning some of the critiques of this concept. Glen Sean Coulthard writes that "state-sanctioned approaches to reconciliation tend to ideologically fabricate [transitions from an authoritarian past to a democratic present] by narrowly situating the abuses of settler colonization firmly *in the past.*" Glen Sean Coulthard, *Red Skin, White Masks: Rejecting the Colonial Politics of Recognition.* (Minneapolis: University of Minnesota Press, 2014), 22. Noting that the word *conciliation* means to bring into harmony and, thus, *reconciliation* means to re-establish harmony, Métis painter, curator, and critic David Garneau argues that use of the latter term "imposes the fiction that equanimity was the status quo between Indigenous people and Canada." Garneau opts to use *conciliation* instead to avoid this fiction. David Garneau, "Imaginary Spaces of Conciliation and Reconciliation: Art, Curation, and Healing," *Arts of Engagement: Taking Aesthetic Action In and Beyond the Truth and*

alignment here with anthropologists Mario Blaser and Marisol de la Cadena's call for "a form of knowledge that does not require sameness." Blaser and de la Cadena ask whether conditions can be created where heterogeneous knowledge practices, such as the kinds described by Ermine, "do not encounter each other in a relation of subjects to objects."[44]

Though accomplishing the above calls for ethical engagement is a tall order, I have designed and written this dissertation with this goal constantly in mind. The rejection of Western universality is at the heart of this dissertation; in fact, this project grew out of being deeply moved by my initial encounter with Amanda Strong's *Biidaaban* (at the time, a work in progress). When, soon after, I encountered Suzanne Husky's *Which Plants to Teach Ethics to Artificial Intelligence*, and then Lisa Jackson's *Biidaaban*, I began to see connections across practices, and the rough outline of this dissertation began to emerge. Despite these connections, I have resisted the impulse to align these artworks, or the worldviews they reflect, into a master

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Reconciliation Commission of Canada, eds. Dylan Robinson and Keavy Martin (Waterloo, ON: Wilfrid Laurier University Press, 2016), 30. Writing from an Australian context, Wiradjuri artist Hannah Donnelly notes that "present reconciliations push the onus and responsibility of healing the trauma of colonisation onto us, Indigenous women, and our ability to forgive." Hannah Donnelly, "Indigenous Futures and Sovereign Romanticisms. Belonging to a Place in Time," *Sovereign Words: Indigenous Art, Curation and Criticism*, ed. Katya Garcia-Anton (Amsterdam: Valiz, 2019), 271. Regardless of the terms used, each of these critiques point to the need to not view the process of building ethical relations in an overly optimistic or ahistorical way, which itself can serve to assimilate or erase the experiences of Indigenous people.

[44] Mario Blaser and Marisol de la Cadena, "Introduction: Pluriverse: Proposals for a World of Many Worlds," *A World of Many Worlds*, eds. Marisol de la Cadena and Mario Blaser (Durham: Duke University Press, 2018), 10.

narrative. They do not all point me in the same direction or shed light on identical questions. I have conceived of this dissertation as "a meeting place," to use Ermine's phrase, in which artworks and ideas (including my own) can share space. Though I am the author of this text, and I take responsibility for what is written here, my goal is not to speak for Indigenous artists or to translate their work into familiar academic terms, but to engage with their practices in ways that are respectful, non-extractive, and open to being shaped by them. This includes acknowledging the limits of my understanding, resisting the canonizing impulse, and remaining accountable to the communities and thinkers whose work informs this dissertation. In other words, I am doing my best to operate within, and to thereby foster, an ethical space of analysis, generated in advance by my case studies, themselves ethical spaces of aesthetic investigation that cultivate compelling relationalities with the botanical world.

Overview of Chapters

This dissertation explores the epistemological, aesthetic, and political dimensions of botanical and multispecies visuality in contemporary media art, with a particular focus on works that challenge dominant humanist paradigms. Across three chapters, the project interrogates how visual media—especially documentary film, animation, and virtual reality—construct and deconstruct relationships between humans and plants, and how these constructions reflect broader ontological and ethical frameworks. Each chapter builds upon the last, moving from an analysis of dominant visual regimes to alternative models of multispecies relationality,

culminating in a speculative engagement with virtual nature and its implications for authenticity, embodiment, and care.

Chapter 1: Botanical–Multispecies Visuality: Documentary Challenges to Humanist Epistemology

Chapter 1 lays the theoretical and analytical foundation for the dissertation by examining the visual strategies employed in nature documentaries and experimental films to represent plant life. The chapter introduces the concept of what I term *botanical–multispecies visuality* as a counter-visual regime that resists humanist epistemology. Through close readings of Suzanne Husky's *Which Plants to Teach Ethics to Artificial Intelligence* and Lisa Jackson's *Lichen*, the chapter articulates botanical–multispecies visuality as a visuality premised on non-appropriation, epistemic humility, relationality, and embodied spectatorship. Drawing on theories of haptic visuality, Indigenous science, ecofeminism, and biosemiotics, the chapter demonstrates how these films foster multispecies encounters that challenge the separation of subject and object, viewer and viewed, and human and nonhuman. This separation is dominant in much mainstream visual culture, such as BBC nature documentaries like *Life on Earth*, *Planet Earth*, and *The Green Planet*. In this chapter, I argue that these works exemplify a humanist visuality characterized by anthropocentrism, individuation, mastery, and disembodied observation. Through technologies such as aerial photography, time-lapse imaging, and motion-control rigs, these documentaries claim to offer viewers access to the "perspective" of plants.

However, I argue that these technologies ultimately reinforce human-centered epistemologies and aesthetic conventions, often translating plant life into metaphors of warfare, competition, and spectacle.

Chapter 2: Animating Relationality: Bodies, Plants, and Resistance

Building on the theoretical framework of botanical–multispecies visuality, Chapter 2 turns to the medium of animation to explore how movement, metamorphosis, and embodiment can visualize multispecies relationality and resistance. I investigate contemporary animated works by Amanda Strong and Miwa Matreyek that reclaim animation as a multispecies, world-making practice. Strong's stop-motion film *Biidaaban (The Dawn Comes)* is analyzed as a form of Indigenous futurism and cultural continuance, where syrup harvesting becomes a ritual act of resistance and relational care. The film's use of ancestral puppetry, nonlinear temporality, and grounded normativity exemplifies how animation can visualize Indigenous epistemologies and multispecies coalitions. Matreyek's animated performance *Infinitely Yours* expands the scale of multispecies storytelling to the planetary, using layered projections and embodied choreography to stage ecological grief, human vulnerability, and botanical agency.

In contrast to these works, the chapter traces the evolution of animated visuality from anarchic, animist potential to sentimental anthropomorphism. Drawing on Sergei Eisenstein's writings on Disney, the chapter argues that early animation possessed a latent radicality capable of disrupting physical laws and representational

norms. However, as Disney's technical mastery increased, this potential was domesticated into a human-centered worldview that used plants as decorative extensions of human emotion and narrative coherence, setting the stage for a reclamation by artists like Strong and Matreyek.

Chapter 3: Virtual Plants and the Question of Authentic Nature

Chapter 3 extends the inquiry into multispecies visuality into the realm of virtual reality, examining how immersive technologies mediate our relationships with nature and the nonhuman world. The chapter takes as its principal subject Lisa Jackson's virtual reality experience *Biidaaban: First Light*, which envisions a future Toronto transformed by Indigenous resurgence and botanical reclamation. Unlike escapist simulations explored in the chapter, *Biidaaban* invites viewers into a mode of relational immersion rooted in care, continuity, and embodied response. Through its use of Indigenous languages, multispecies aesthetics, and speculative temporality, the piece challenges technoscientific futurity and reimagines virtual nature as a tool for decolonial world-making.

Drawing on environmental humanities, feminist science and technology studies, and critical media theory, the chapter interrogates the binaries of nature/culture, authenticity/artificiality, and real/virtual. It argues that virtual nature is not inherently disembodied or inauthentic; rather, its value depends on the kinds of relationships it enables and the worlds it helps bring into being. The chapter concludes by proposing that care—understood as an embodied, multispecies ethic—is

the connective tissue between the virtual and the concrete, and that virtual media can play a meaningful role in cultivating ecological awareness and multispecies solidarity.

Conclusion: Between the Botanical and the Technological

The conclusion returns to the dissertation's central tension between the botanical and the technological, situating the artworks I analyze within the historical shift from relational, life-centered understandings of nature to the mechanistic and technoscientific frameworks that organize much of contemporary life. By tracing how these artists envision relational, multispecies ways of being that persist within and against the logics of mechanization, the dissertation demonstrates that technologically mediated visuality can cultivate forms of botanical relationality that resist dominant humanist and capitalist frameworks. This, I argue, is the project's principal accomplishment: showing how film, animation, and VR become sites where non-humanist epistemologies not only survive but generate new ethical and aesthetic possibilities. The conclusion also points toward future work on how emerging technologies (including AI and new immersive platforms) will continue to reshape human–nonhuman relations, and what kinds of multispecies visualities might yet be possible.

Chapter 1:

Botanical-Multispecies Visuality: Documentary Challenges to Humanist Epistemology

This chapter examines the relationship between documentary film, epistemology, and multispecies relationality. Specifically, the chapter considers how different visual approaches to representing and engaging with plant life can either construct or deconstruct strict divisions between subject and object, viewer and viewed, and human and nonhuman. The chapter identifies specific visual technologies and models of visuality and analyzes the implications of each. I begin with the form of the blue-chip nature documentary as represented by recent productions of BBC Studios Natural History Unit (NHU), from its inception in the 1950s through to the recent series *The Green Planet* (2022). The chapter considers how this form represents a humanist form of visuality and reproduces humanist notions of individuation, anthropocentrism, and mastery. Next, I consider examples of experimental documentary films that challenge or resist humanist visuality in favor of what I term *botanical-multispecies visuality*. My articulation of botanical-multispecies visuality is developed through close viewing of French-American artist Suzanne Husky's *Which Plants to Teach Ethics to Artificial Intelligence* (2019) and Canadian (Anishinaabe) filmmaker Lisa Jackson's *Lichen* (2020) and by bringing together critical plant studies, ecofeminism, feminist science and technology studies, Indigenous science, biosemiotics, and media scholar Laura U. Marks' theories of haptic visuality. By developing botanical-multispecies visuality as an analytical tool,

this chapter considers the possibilities, implications, and politics of a visuality that is multispecies and shaped by the botanical or vegetal.

Blue-Chip Documentaries and *The Green Planet*

During the first two decades of the twenty-first century, several documentary films and television series produced by NHU—especially those narrated by presenter David Attenborough—have come to define and greatly influence the genre of nature documentaries. NHU was founded in 1957 and has worked with Attenborough since its beginnings. Though NHU productions were broadcast internationally in Canada and Australia starting in 1957, their global reach was limited for the studio's first several decades. NHU saw its earliest major hit with 1979's 13-episode series *Life on Earth*. Narrated by Attenborough, the series examines the evolution of life on Earth and includes episodes with titles such as "The Swarming Hordes," "Conquest of the Waters," "Invasion of the Land," "Victors of the Dry Land," "Lords of the Air," reflecting the conflict-based lens that would become prominent in many Attenborough-presented NHU documentaries.

As Morgan Richards explains, *Life on Earth* differed from contemporaneous "blue-chip" nature documentary programs by its inclusion of "a knowledgeable on-screen presenter to carry its scientific argument" and by "infusing [the genre] with a new level of technical and scientific acuity."[1] According to Richards, the series was

[1] Morgan Richards, "Global Nature, Global Brand: BBC Earth and David Attenborough's Landmark Wildlife Series," *Media International Australia* 146, no. 1 (2013): 147, https://doi.org/10.1177/1329878X1314600118.

"designed with a number of in-built concessions for US television networks" in order to capitalize on larger international markets.[2] Though potential co-producers worried about the series' focus on subjects like single-celled organisms and even its lack of Robert Redford as a presenter, it eventually found success and acclaim globally, including in the US. For Richards, *Life on Earth* "set the scene for the glossy style and spectacular cinematography that has since become integral to these series."[3]

The figure of Attenborough, the technical acuity of NHU productions, and the glossy and spectacular cinematography of these series have only grown steadily since 1979, resulting in what ecomedia scholar Sean Cubitt has dubbed "a genre which the BBC has very nearly made synonymous with itself."[4] A new generation of NHU productions perhaps begins with 2001's *The Blue Planet*, which was nominated for several British Academy Television Awards (BAFTA TV) and Primetime Emmy Awards, winning BAFTA TV awards for Best Photography (Factual) and Best Original Television Music and Emmys for Outstanding Cinematography for Non-Fiction Programming (Single or Multi-Camera) and Outstanding Music Composition for a Series (Dramatic Underscore).[5] Given the prominence and success of this new generation of blue-chip nature documentaries, Cubitt writes in his chapter on *The Blue Planet* that what the series "indicates throughout is that techne is the only route through which we now can sense the world, most especially that part of the world's

[2] Richards, "Global Nature, Global Brand," 148.
[3] Richards, "Global Nature, Global Brand," 149.
[4] Sean Cubitt, *EcoMedia* (Amsterdam: Rodopi, 2005), 48.
[5] "Awards," The Blue Planet, IMDB, accessed July 11, 2023, https://www.imdb.com/title/tt0296310/awards/.

conversations which are not conducted in wavelengths we can hear, see or otherwise apprehend."[6] That is to say, a very specific form of business-driven technological mediation has become a nearly irresistible lens through which we encounter the world.[7]

NHU followed *The Blue Planet* with *Planet Earth* (2006), co-produced with the Discovery Channel (with Sigourney Weaver replacing Attenborough in the US version), and the first series by either studio filmed in high definition. Writing for the *New York Times*, Michael Slenske argued that "the result is a crystal-clear creature's-eye view of the entire globe." Producer Alastair Fothergill commented in the *Times* that with *Planet Earth*, the production team "took the cinematic style beyond *Blue Planet*," specifically calling out "emotionally engaging scenes" and "a very big cinematic score." Though released only five years apart, the aesthetic possibilities were dramatically expanded for *Planet Earth*. Fothergill explains, for example, that until *Planet Earth*, "the only aerials you could film in nature documentaries were wide angles because if you flew close enough to get a tighter shot you'd frighten the animals." This series revolutionized the genre with the introduction of the Cineflex heligimble, a gyroscopic stabilizing device that is attached to a helicopter and can support lenses many times more powerful than those previously used in nature

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[6] Cubitt, *EcoMedia*, 59.

[7] Cubitt explains elsewhere in *EcoMedia* that he uses the term *techne* "to designate not just machinery but such techniques as language and gesture that mediate between the green world and the human." This corresponds with *tekhne*, the Greek root of the word *technology*, an art or craft. Cubitt, *EcoMedia*, 4.

documentaries.[8] Here we see a major step towards a disembodied visuality in nature documentaries with an attempt to remove the human observer from the observation—not through automation (more on that later) but through technologies that record activities that human observers could have never previously experienced.

Ten years later, the series was followed up with *Planet Earth II* (2016), filmed in ultra-high definition and aided by improved camera stabilization technology, remote recording technology, and aerial drones. In a press release about the series, the BBC writes that with these technologies "we take the audience closer to nature and allow you to experience the wilderness as if you were there." In reality, however, these technologies allow viewers to experience the wilderness as if they *were not* there. Similar to Cubitt, Joshua McGuffie writes of *Planet Earth* and *Planet Earth II* that "sweeping aerial shots, time-lapse sequences, close-ups, and night vision scenes remind the historian that human interactions with nature so often rely on technological mediation."[9] Though this technological mediation is not new, these productions raise the question of how different technologies foster (or resist) particular human-nonhuman interactions and relationships.

Following *Planet Earth*, there has been a veritable conveyor belt of NHU Attenborough productions. Among these is *The Green Planet*, a five-part series released in 2022 that explores the lives and ecosystems of plant species across the

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[8] Michael Slenske, "All Creatures Great, Small ... and Endangered," *New York Times*, March 18, 2007, https://www.nytimes.com/2007/03/18/arts/television/18slen.html.
[9] Joshua McGuffie, "*Planet Earth II*: BBC (November 2016–January 2017) Television," *Journal of the History of Biology* 52 (2019): 505, https://doi.org/10.1007/s10739-019-09575-4.

globe. As one of the most recent NHU documentaries at the time of writing, the series attests to the significant growth in audiovisual technology in just the six years since *Planet Earth II* while carrying forward NHU hallmarks including spectacular visuals and a cinematic score. Another throughline from 1979's *Life on Earth* to the present is the reliance on anthropocentric storytelling and framing, especially seeing and explaining the nonhuman world through a lens of warfare and conflict. In arguing for a distinction between environmentalist film and a more activist-oriented ecocinema, media scholar Paula Willoquet-Maricondi contends that for films of the former category, even when they have "pro-environment" messages, "their fundamental message is one that affirms rather than challenges the culture's fundamental anthropocentric ethos."[10] Willoquet-Maricondi specifically mentions fiction films *Erin Brockovich* (2000) and *The Day After Tomorrow* (2004) and the documentary *An Inconvenient Truth* (2006), all of which focus on heroic individuals and center human perspectives, and, similarly, I will argue that *The Green Planet*, along with the lineage of NHU productions, falls firmly into this category.

Accompanied by dramatic music, in his introduction to the first episode, "Tropical Worlds," Attenborough lays the groundwork for the entire series, declaring: "Plants flourish in remarkable ways, yet for the most part, the secrets of their world have been hidden from us—until now. Now we have new groundbreaking technology that enables us to enter their extraordinary world and see their lives from their

[10] Paula Willoquet-Maricondi, "Shifting Paradigms: From Environmentalist Films to Ecocinema," *Framing the World: Explorations in Ecocriticism and Film*, ed. Paula Willoquet-Maricondi (Charlottesville: University of Virginia Press, 2010), 47.

perspectives." In this quote, Attenborough clarifies the film's intentions to seek an all-knowing relationship with the plant world—bearing all of its secrets—but he states that the series will utilize technology to mimic, replicate, or translate plants' own perspectives. That is, viewers will not see plants from our human vantage point, we are told, but as if we were plants ourselves. If *Planet Earth* tried to give viewers a disembodied view of the natural world, *The Green Planet* claims to reembody us—as balsa trees, giant water lilies, and stone plants.

Despite this lofty ambition, the very first shot following the episode's introductory montage betrays the perspective that seems to drive the series. We see the canopy of a dense rainforest that nearly fills the entire screen save for a small band of cloudy sky. Diagonally bisecting the screen are the cables of a sky tram carrying a green gondola and a lone passenger. The next shot, a close-up, reveals that passenger to be Attenborough, who wears a casual linen shirt reminiscent of the "safari style" and emphatically imparts knowledge on the wonders of rainforests. In these two opening shots, Attenborough literally sits above the world, as if he were apart from it. A minute later, still in the gondola, Attenborough looks down at the world below, gestures toward it, and proclaims with a slight smile, "This is a battlefield."

Both opening shots are forms of aerial shots—the first more direct, the second due to Attenborough's position in the gondola—which are a common if not clichéd trope in blue-chip nature documentaries. Many scholars have critiqued aerial perspectives as aiding dominant narratives, the rationalization and mastery of land,

and the illusion of disembodied knowledge. In her influential essay on feminist epistemology, to which I will return later in this chapter, feminist philosopher Donna J. Haraway contrasts embodied knowledge with "the view from above, from nowhere, from simplicity."[11] In her essay arguing for "the fish-eye point of view that sees below the surface," environmental humanities scholar Macarena Gómez-Barris writes that satellite imaging technologies "so completely map and commoditize the landscape from above."[12] For Gómez-Barris, the view from above is intimately linked with colonial and extractive projects. Writing about Edward Steichen's photography during World War One, photographer and theorist Allan Sekula argues that "with airplane photography … two globalizing mediums, one of transportation and the other of communication, were united in the increasingly rationalized practice of warfare."[13] Film scholar Paula Amad, however, makes an important intervention in this debate, arguing for a multivalent approach to aerial imagery. She details a pre-modern utopian dimension to aerial vision, but she also argues for its importance in contemporary times. Referring to French geographer Jean Brunhes' 1925 composite aerial image of the French city of Reims, which suffered greatly from German aerial bombardment during WWI, Amad writes that "the aerial view provided a shift that

[11] Donna J. Haraway, "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective," *Simians, Cyborgs, and Women: The Reinvention of Women* (New York: Routledge, 1991), 195.
[12] Macarena Gómez-Barris, *The Extractive Zone: Social Ecologies and Decolonial Perspectives* (Durham, NC: Duke University Press, 2017), 105, 98.
[13] Allan Sekula, "The Instrumental Image: Steichen at War," *Artforum*, December 1975, https://www.artforum.com/print/197510/the-instrumental-image-steichen-at-war-36049.

would be crucial in the eco-environmentalism that human geography bequeathed to the late-twentieth century. Aerial, space and satellite images may make humans invisible, but they also bring into visibility collective human responsibility for the earth's future."[14] Amad concludes her essay by suggesting that we can rethink Haraway's call for an embodied epistemology so that there is room for aerial vision. In contrast, art historian T.J. Demos sees a kind of alienation in some forms of environmentally focused aerial photography. He argues, for example, that Edward Burtynsky's sweeping aerial photographs of sites of extraction fail to stage the ambivalence "between consumer complicity and industry-led development"—an ambivalence Burtynsky articulates in writing—and instead dramatizes "the perverse visual beauty of a technological, and even geological, act of mastery devoid of environmental ethics."[15] Thinking along the lines of Gómez-Barris' fish-eye metaphor, and with Demos' critique in mind, we might ask if there is a bird-eye or canopy point of view that is equally contrary to the point of view of satellite technology and warplanes and can visualize environmental ethics.

The Green Planet's opening scenes don't seem to live up to this ideal, instead relying on a tried and true aesthetic likely to engender anticipated emotions or sensations in viewers. Gómez-Barris suggests that "the extractive viewpoint succeeds

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[14] 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 (February 2012): 75, https://doi.org/10.1080/03087298.2012.632567.
[15] T.J. Demos, *Against the Anthropocene: Visual Culture and Environment Today* (Berlin: Sternberg Press, 2017), 61, 64.

precisely by becoming the normative way we see and universalize the planetary."[16] It is precisely blue-chip documentaries that have gone a long way toward injecting this viewpoint into the public consciousness. In these scenes, Attenborough is shown to be surveying the land below (fig. 1.1); paired with his safari-style attire and his reputation as an expert naturalist, these scenes clearly draw on a history of European colonists, surveyors, anthropologists, and filmmakers traveling to "exotic" locales reveal hidden secrets—whether knowledge or resources. Furthermore, Haraway describes the idea of "seeing everything from nowhere" as a "god-trick,"[17] and we can hear ambitions for god-like vision in Fothergill's pursuit of aerial footage for *Planet Earth*, of which *The Green Planet* is a clear inheritor.



FIGURE 1.1. Still from "Tropical Worlds," *The Green Planet*, 2022.

[16] Gómez-Barris, *The Extractive Zone*, 97.
[17] Haraway, "Situated Knowledges," 189.

The production of *The Green Planet* depended upon developing a new motion control camera to take timelapse photography, a hallmark of the series, beyond what viewers were familiar with. Rather than a stationary camera recording a subject over time, this rig captures the changing position of a subject that moves over time. Chris Field, one of the designers of this rig, says in the behind-the-scenes segment at the end of the first episode that "plants often behave like animals," and a system like this allows for capturing plant movement and growth. The system was nam*ed* Triffid, after a mobile plant species in John Wyndham's 1951 novel *The Day of the Triffids*. Of the name, producer Paul Williams has said "We called it the Triffid because when you see plants moving and fighting, it is very science fiction."[18] Notably, Field and Williams see, and perhaps represent, plant movement through either the lens of animals or of the unreal. One reviewer referred to the series as "a botanical horror flick" with another writing that "some of the images recall the terror of 1970s horror films."[19] Though these perspectives may come from the foreignness of the lives of plants, the technology behind the series is driven by an anthropocentric visuality, thus

[18] Jenny Priestley, "How a Triffid Captured *The Green Planet*," TVBEurope, updated January 17, 2022, https://www.tvbeurope.com/production-post/how-a-triffid-captured-the-green-planet.

[19] Carol Midgley, "Attenborough Unearths a Botanical Horror Flick," review of *The Green Planet*, BBC One, *Times* (UK), January 17, 2022, https://www.thetimes.co.uk/article/the-green-planet-review-attenborough-unearths-a-botanical-horror-flick-pvrf70w8x; Anita Singh, "Don't Look Now - This is the World's Deadliest Flower," review of *The Green Planet*, BBC One, *Telegraph*, January 9, 2022, https://www.telegraph.co.uk/tv/2022/01/09/green-planet-review-dont-look-now-worlds-deadliest-flower/.

transforming the plant world into something that is both human and nonhuman, a recipe for horror tropes in cinema.

For Attenborough and the series' producers, drones and time-lapse photography are a window into the perspective of plants. The thinking behind time-lapse is similar to Fothergill's thinking behind aerial photography—it shows us movement that would otherwise remain hidden from the human eye. However, it is an assumption to claim that this is the perspective of plants. When we see a vining plant pirouetting through the air in search of another plant to grasp onto and then subsequently strangling a monstera plant, we are led to believe that these rapid movements are the experience of the vine itself. In reality, time-lapse is a mere translation by human technology into a visuality that is legible to humans. The final episode of the series is dedicated to the relationship between plants and humans, and the episode opens with a series of time-lapse scenes from around London showing fast-moving pedestrians, the flicker of sped-up electronic billboards, and cars and double-decker buses circling the roundabout at Trafalgar Square. If time-lapse offers the perspective of plants, why are we seeing it here to represent the human activity of London? Writing about an episode of *The Blue Planet* dedicated to the deep ocean Sean Cubitt writes that the use of time-lapse provides a "sense of epic sweep" that contributes to the spectacle needed to "acquire sales, hold audiences and build a viable vehicle for promoting both scientific knowledge and broadly ecological themes."[20] Given its highly varied use, we can see that time-lapse is not a specific

[20] Cubitt, *EcoMedia*, 48.

tool designed to reveal the secrets of plant life, but a central component of blue-chip documentaries' aesthetic and visuality. In addition to its spectacular effect and its exhibition of technical prowess, we can also see time-lapse, as deployed in *The Green Planet* as another form of Haraway's god-trick.

Chief among the challenges of *The Green Planet* is a desire to know and represent plants' perspectives while relying on human technology and human ways of thinking, seeing, and representing. Of central importance here is the concept of *Umwelt*, first articulated by the early-twentieth-century biologist Jakob von Uexküll and later taken up within the fields of zoo- and biosemiotics. Biosemiotician Kalevi Kull defines *Umwelt* as "the self-centred world of an organism, the world as known, or modelled."[21] For Uexküll, an organism's *Umwelt* is shaped by the senses that are possible based on its physiology. In one example, he writes, "From the enormous world surrounding the tick, three stimuli [the perception of butyric acid from passing animals, a sense of collision, and a sense of warmth] glow like signal lights in the darkness and serve as directional signs that lead the tick surely to its target."[22] Uexküll continues by explaining that not only do these stimuli lead the tick to its target, they in fact define (or "constrict" in his more limiting language) the entire world of the organism. All the texture and richness of the world are perceived only through these stimuli. Though Uexküll does not deny an objective world, he writes

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[21] Kalevi Kull, "Umwelt and Modelling," *The Routledge Companion to Semiotics*, ed. Paul Cobley (London: Routledge, 2010), 43.
[22] Jakob von Uexküll, *A Foray into the Worlds of Animals*, in *A Foray into the Worlds of Animals and Humans with A Theory of Meaning* (Minneapolis: University of Minnesota Press, 2010), 51.

that "the objective realities of the surroundings never appear as such in [*Umwelten*]."[23] That is to say, a cold-blooded mammal walking through the woods may be an objective reality, but this presents itself in wildly different ways (or not at all) to different organisms. Philosopher Giorgio Agamben writes that Uexküll shows us that "a unitary world does not exist" among living beings.[24] In Chapter 3, we will see how research on the *Umwelt* of frogs can inform our understanding of simulations and authenticity. More broadly, the concept is helpful for luring us away from anthropocentrism and reminding us that a perspective ordered by human sense organs is only one of a multitude of ways of interpreting reality.

What, then, is *The Green Planet* striving for in its goal to represent the plant's perspective? Through aerial and time-lapse photography, in particular, the series relies on human perception—and only the ocular. The effect of this approach is more than visual; it appears to both lead and be led by thinking about plants in human terms, specifically human conflict and warfare. In describing the relationship between the fungus Leucoagaricus, leafcutter ants, and bixa trees, Attenborough relies on metaphors of war. The plants in the rainforest, he explains, are "under constant attack," and we see this process unfold with time-lapse and subterranean photography. Dramatic music accompanies the introduction of the leafcutter ant, like a John Williams score introducing a film's antagonist. We learn that the ants retrieve pieces of bixa leaf to feed the fungus in exchange for mushrooms that they eat. Bixa

[23] Uexküll, *A Foray into the Worlds of Animals*, 125.
[24] Giorgio Agamben, *The Open: Man and Animal* (Stanford: Stanford University Press, 2004), 40.

trees, in turn, “fight back” using “chemical warfare,” Attenborough explains, invoking the horrors of World War I. But the chemicals that trees release, which can harm the fungus, force the ants to move to other plants, allowing the affected ones to recover. As explained by Attenborough, the result seems to be one of balance and mutual thriving. While we don’t need to frame this exchange as symbiotic or commensal, we can nonetheless see that the war metaphor doesn’t hold up to even Atteneborough’s own narrative. Another peculiar instance of this bias for human conflict is Attenborough’s description of fungi decomposing a dead tree trunk, which is also aided by time-lapse. “The threads of competing fungi envelop their victim’s body,” he explained, “releasing enzymes which digest the tree’s tissue and unlock the nutrients within.” But why is the tree a victim? It is already dead, and the decomposition of dead matter is an absolute necessity for life. Perhaps this scene of fungal filaments devouring a tree at a speed that we would never experience in the forest is one of those horror scenes reviewers commented upon. To be clear, nature is not a site of peace and unrelenting cooperation. Predation, opportunism, and competition for resources are all present and necessary in nature. However, the way we discuss and visualize these activities need not be static. While, in some ways, *The Green Planet* tries to move beyond the human perspective, it reinforces this perspective again and again through its visuality and its use of anthropocentric metaphor. By trying to visually translate or convert the plant *umwelt* into human terms, *The Green Planet* has carried over human concepts that are misaligned with the subject.

Beyond the Blue Chip

Some scholars argue that dominant forms of visuality, like those represented in *The Green Planet*, are partly responsible for the rationalist humanist separation of the individual from the external world, including the mind from the body and the human from the nonhuman.[25] If this is the case, what would an entangled, multispecies model of visuality look like? Could such a visuality challenge some of the assumptions and pitfalls of humanist epistemology? Geographer Anna M. Lawrence writes that "plants challenge us to connect with our somatic and sensory experiences in order to consider the more embodied meaning of sentience as being alive to one's environment."[26] Here Lawrence introduces some of the characteristics of the botanical lifeworld and its relationship to the human that challenge the distance between plant and human endemic to humanist epistemology and visuality. By considering its articulation in two recent documentary films—Husky's *Which Plants to Teach Ethics to Artificial Intelligence* (2019) and Jackson's *Lichen* (2020)—I propose that a botanical-multispecies visuality premised on non-appropriation, epistemic humility, relationality, and the embodiment of media spectatorship (all of which will be discussed below) presents a counter visuality that seeks to avoid the

[25] See Susan R. Bordo, *The Flight to Objectivity: Essays on Cartesianism and Culture* (Albany: State University of New York Press, 1987) and Haraway, "Situated Knowledges."
[26] Anna M. Lawrence, "Listening to Plants: Conversations Between Critical Plant Studies and Vegetal Geography." *Progress in Human Geography* 46, no. 2 (2022): 640, https://doi.org/10.1177/03091325211062167.

supremacy of the human and their knowledge. I accomplish this by interrogating humanism and its constituent visualities, considering feminist and Indigenous alternatives to humanist knowledge, and then elaborating on the characteristics of this counter-visuality, especially drawing on theories of embodied knowledge, haptic visuality, plant studies, and Indigenous science and epistemology.

In *Which Plants to Teach Ethics to Artificial Intelligence*, French-American artist Suzanne Husky asks herbalists, ethnobotanists, and witches to answer the titular question. Rather than seeking solutions for artificial intelligence developers—something Husky is explicitly uninterested in—the film's conceit is meant to challenge the logic of artificial intelligence (AI) and agricultural technology (AgTech). Husky structures the film in such a way that highlights the intimacy between the viewer, her interviewees, and plants. Meanwhile, cold and calculating footage taken from AgTech marketing materials breaks up and separates the interviews, stretching out the tension between an intimate and grounded visuality and a rationalized corporate one. *Lichen,* a short IMAX documentary by Anishinaabe filmmaker Lisa Jackson, looks and feels quite differently than *Which Plants*. It is composed entirely of extreme close-up shots of twenty-two different lichen (listed in order of appearance in the credits, as is common with human actors), accompanied with a voiceover by lichenologist Trevor Goward. Though captured with high-tech equipment, these images resist the spectacle of mainstream nature documentaries and are a means to explore the relationality that is the essence of lichen and Jackson's own Indigenous view of science and epistemology.

An Analysis of Humanism

It can be challenging to define *humanism* because the term has a wide array of related but distinct meanings, ranging from the study of Greek and Latin literature to being a near synonym for secularism. For my purposes, I use the term to refer to a broad set of philosophies that prioritize the figure of the human and attribute to its essence individuation, freedom, autonomy, and reason. Furthermore, I recognize that within humanism, the figure of the human is not interchangeable with *Homo sapiens*; rather, the human is a class of the human species that is assigned the aforementioned traits and afforded special consideration over others. In his 1938 essay, "The History of Art as a Humanistic Discipline," art historian Erwin Panofsky offers a helpful genealogy and definition of humanism, or more specifically, *humanitas*, the Latin word for human nature from which *humanism* is derived. Reaching at least as far back as the Roman statesman Cicero, Panofsky argues that *humanitas* distinguished the human from that which was less than it. "It meant," he writes, "the quality which distinguishes man, not only from animals, but also, and even more so, from him who belongs to the species *homo* without deserving the name *homo humanus*."[27] By the Middle Ages, he writes, the term came to distinguish humanity not from animalism or barbarity but from divinity. During the Renaissance, due to a renewed interest in the classical definition, *humanitas* came to hold both meanings, defining humanity's

[27] Erwin Panofsky, "The History of Art as a Humanistic Discipline," *Meaning in the Visual Arts: Papers in and on Art History* (Woodstock, NY: The Overlook Press, 1974), 2.

special place between that which is lower and that which is higher than it. Panofsky defines this synthesis as "the conviction of the dignity of man, based on both the insistence on human values (rationality and freedom) and the acceptance of human limitations (fallibility and frailty)."[28] This is the definition of *humanism* that Panofsky leaves readers with, but he fails to take into consideration further shifts initiated by the Enlightenment—and nearly 90 years of technological and scientific development following the essay's publication further complicates the Renaissance definition. With the advent of rationalism and the ebbs and flows of secularism, I argue that the idea of the human has been stripped of much of its fallibility and frailty in favor of rationality and freedom, perhaps leaving us with a concept closer to the classical definition.

Beyond providing his definition, Panofsky's essay shows humanism's impact on Western art history, an influence I aim to complicate. In one section of the essay, he writes that it is possible to experience any object aesthetically—whether it is a natural object, human-made art, or a human-made practical instrument. "We do this," he explains, "when we just look at it (or listen to it) without relating it, intellectually or emotionally, to anything outside of itself."[29] He further explains that "only he who simply and wholly abandons himself to the object of his perception will experience it aesthetically."[30] For Panofsky's humanist art history, then, aesthetic experience only exists within a vacuum and a state of, what I consider, impossible self-denial. In such

[28] Panofsky, "The History of Art as a Humanistic Discipline," 2.
[29] Panofsky, "The History of Art as a Humanistic Discipline," 11.
[30] Panofsky, "The History of Art as a Humanistic Discipline," 11.

a proposition we see twentieth and twenty-first-century humanism's shedding of human limitations that was apparent in the Middle Ages. What Panofsky suggests is nothing short of transcendence. In his book *What is Posthumanism?*, scholar Cary Wolfe writes that "*the* fundamental anthropological dogma associated with humanism" is "that 'the human' is achieved by escaping or repressing not just its animal origins in nature, the biological, and the evolutionary, but more generally by transcending the bonds of materiality and embodiment altogether."[31] In contrast to Panofsky's humanist art history, a counter-humanist visuality, such as the one I develop, would be self-consciously grounded and embodied.

Perhaps an extension of the humanist cleaving of the human from the "bonds of materiality," Panofsky's understanding of humanism leads him to declare a rather strict separation between nature and culture—he refers to these as entirely different "cosmos."[32] Panofsky is in no way the progenitor of this dualism, but in his essay, we see clear linkages, and I would argue entanglements, between humanist logic, nature/culture duality, disembodied aesthetics, and the division of lesser and greater classes of human.

Humanism's Discontents

Humanism's power to divide and abet domination has long been visible. In his contribution on humanism to the *New Dictionary of the History of Ideas*, Renaissance

[31] Cary Wolfe, *What Is Posthumanism?* (Minneapolis: University of Minnesota Press, 2009), xiv–xv.
[32] Panofsky, "The History of Art as a Humanistic Discipline," 6.

scholar Albert Rabil, Jr. recalls the prominent Spanish debate between 1550 and 1551 regarding the right of Christians to enslave Indigenous Americans.[33] The humanist philosopher Juan Ginés de Sepúlveda, drawing on Aristotle and arguing against the Dominican friar Bartolomé de Las Casas, made the case that some people are born to be natural slaves. Essayist and critic Sylvia Wynter is a key source for understanding the broader implications of this line of reasoning. In one influential essay, she writes that the invention of the human ("Man" in her parlance) institutionalized "enslaved Black Africans as the physical referent of the projected irrational/subrational Human Other to its civic-humanist, rational self-conception."[34] In another essay, written in the aftermath of the acquittal of the police involved in the beating of Rodney King, Wynter writes about how the acronym *NHI* (meaning "no humans involved") was used within the Los Angeles judicial system to refer to the violation of the rights of young Black men, particularly jobless men. In the essay, Wynter writes, "For whilst the human species is bio-evolutionarily programmed to *be* human on the basis of the unique nature of its capacity for speech it realizes itself *as human* only by coming to regulate its behaviours, no longer *primarily*, by the genetic programs specific to its genome, but by means of its narratively instituted conceptions of itself; and therefore by the *culture-specific discursive programs*, to which these conceptions give rise."[35]

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[33] Albert Rabil, Jr., "Humanism: Renaissance," *New Dictionary of the History of Ideas*, ed. Maryanne Cline Horowitz (Detroit: Charles Scribner's Sons, 2005), 1032.
[34] Sylvia Wynter, "Unsettling the Coloniality of Being/Power/Truth/Freedom: Towards the Human, After Man, Its Overrepresentation—An Argument," *CR: The New Centennial Review* 3, no. 3 (Fall 2003): 281-82.
[35] Sylvia Wynter, "'No Humans Involved:' An Open Letter to My Colleagues," *Forum N.H.I. Knowledge for the 21st Century* 1, no. 1 (Fall 1994): 49-50.

In other words, the realization of one as human is not solely dependent upon genetic unity with the category of *Homo sapiens*, but also cultural discourses and even legal frameworks that police the boundaries of the human. In these examples, we see a 500-year-old history of humanism serving as the logic behind systems of domination, genocide, and colonization. Despite its insistence on freedom, humanism only valorizes the freedom of a few; for others, it is a constraining and limiting force.[36]

Dominant and Counter Visualities

This chapter seeks to understand how humanism has shaped dominant models of visuality and then consider non-humanist approaches, particularly those rooted in multispecies botanical encounters. Whereas vision is the biological process of sight, visuality is what art historian Norman Bryson describes as "the social construct of vision."[37] "Between retina and world," he explains, "is inserted a screen of signs, a screen consisting of all the multiple discourses on vision built into the social arena."[38]

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[36] Critiques of humanism are also important to poststructuralists, such as Michel Foucault. *In The Order of Things*, for example, Foucault argues that the category of "man" is a historical contingency. He writes: "It is comforting, however, and a source of profound relief to think that man is only a recent invention, a figure not yet two centuries old, a new wrinkle in our knowledge, and that he will disappear again as soon as that knowledge has discovered a new form." Michel Foucault, *The Order of Things: An Archaeology of the Human Sciences* (London: Routledge, 2005), xxv. Giorgio Agamben describes humanism as an "anthropological machine," signalling the creation of a category that hitherto did not exist. "The anthropological machine of the moderns," he argues, "functions by excluding as not (yet) human an already human being from itself, that is, by animalizing the human, by isolating the nonhuman within the human." For Agamben, the category of *human* is fundamentally fraught whether or not more subjectivities are brought into the category. Agamben, *The Open*, 29, 37.

[37] Norman Bryson, "The Gaze in the Expanded Field," *Vision and Visuality*, ed. Hal Foster (Seattle: Bay Press, 1988), 108.

[38] Bryson, "The Gaze in the Expanded Field," 92.

This notion stands against any idea that vision is unmediated—that all people see and interpret the world exactly as it is. But as artist and scholar of art and technology Margot Lovejoy writes, "Images are not just simple imitations of the world, but are always reordered, refashioned, styled, and coded according to the different conventions which develop out of each medium and its tools."[39] It is not only artistic media that influence representation and visuality, however, but also cultural norms, philosophical conventions, and politics. And thus, for Lovejoy, representation is a form of ideology. Adding depth to the notion of vision, visuality accounts for the role of the social in sight.

Perhaps the most significant development in Western art was the invention of linear perspective in the early fifteenth century, which gave birth to "naturalistic" painting theretofore unseen in medieval art and classical art (unless lost in the latter case). The traditional telling of the story is that around 1420 Florentine goldsmith and architect Filippo Brunelleschi developed a mathematical system for creating the illusion of depth in two dimensions, famously tested with a now-lost painting or drawing of the Florence Baptistery. This discovery was further systematized by the humanist author and polymath Leon Battista Alberti in his 1435 treatise *De pictura* ("On Painting") and by painter Piero della Francesca in his *De prospectiva pingendi* ("On the Perspective of Painting"), published sometime in the last quarter of the fifteenth century. Between Brunelleschi's discovery and Alberti's publication, a

[39] Margot Lovejoy, *Digital Currents: Art in the Electronic Age* (New York: Routledge, 2004), 15.

number of Florentine artists—Masaccio, Donatello, and Lorenzo Ghiberti—began utilizing linear perspective in their work. Commenting on the concentration of these written and artistic manifestations of perspective, Renaissance scholar Giancarlo Maiorino writes, "One cannot overlook the fact that Humanism inspired and surrounded those artists who preceded Alberti in the elaboration of linear perspective." He writes further that humanism "fertilized that high degree of intellectualism, abstraction, and self-confidence that played a fundamental role in the aesthetic and intellectual formation of Alberti's treatises on painting and the family."[40] Two of the biggest stories of the Renaissance are the advent of humanism and the invention of perspective in painting, and Maiorino makes a compelling, if unsurprising, argument linking the two. In simple terms, we can think of perspective as constituting a humanist visuality.

Philosopher Susan R. Bordo argues that in the Middle Ages, when philosophies of organicism were still prevalent, humanity "perceived itself in continuity with the rest of the universe."[41] This was not only a philosophical conception, but a way of seeing the world that influenced language and visual perception itself. In European art of this time, there is a lack of perspective (an imaginary viewer fixed in space), she argues, and thus nothing depicted is spatially fixed. This lack of perspective, Bordo continues, lent itself to representing the

[40] Giancarlo Maiorino, "Linear Perspective and Symbolic Form: Humanistic Theory and Practice in the Work of L. B Alberti," *Journal of Aesthetics and Art Criticism* 34, no. 4 (1976): 479–80. https://doi.org/10.2307/430582.
[41] Bordo, *The Flight to Objectivity*, 60.

mobility of the subject, sensorimotor participation, and a world teeming with things. "Space and time," she writes, "were not as important in establishing relations between things as were eternal meanings, logical connections, and spiritual affinities."[42] Most importantly, Bordo argues that this style of art represented a world in which subjects were absorbed in the world rather than located in it. During the Renaissance, European painting began to exhibit a geometrical point of view that froze perception. For Bordo, this represented a shift from absorption to locatedness in the world. Central to Bordo's argument, the development of a sense of locatedness was a process "from which the human being emerges as a decisively separate entity, no longer continuous" with a universe that has become other to it.[43] Here, we see visuality's role in establishing the discrete Human of humanism—thus there is a feedback loop between humanism and perspective.

Historian Martin Jay has written about this development as ushering in a "scopic regime" called Cartesian perspectivalism, which has lasting influence, though not unchallenged, in the contemporary moment. "The perspectival gaze," he explains, "meant the withdrawal of the painter's emotional entanglement with the objects depicted in geometrical space," resulting in a widening "gap between spectator and spectacle."[44] Art historian Robert Nelson argues similarly that "the gradual adoption of perspective as a means and metaphor for vision [resulted in] a distancing of the

[42] Bordo, *The Flight to Objectivity*, 69.
[43] Bordo, *The Flight to Objectivity*, 70.
[44] Martin Jay, "Scopic Regimes of Modernity," *Vision and Visuality*, ed. Hal Foster (Seattle: Bay Press, 1988), 7.

viewer from the viewed, and hence subjects from objects."[45] Here we see the converse of the continuity between the perceiver and the universe of which Bordo wrote. For Bordo, René Descartes' philosophy, along with the earlier artistic developments described above, contributed to a cleaving of the body, the mind, the self, the other, the human, and the nonhuman.[46] In this sense, the visuality described here is not natural and objective—despite its alliance with modern, Western science—but rather historical and conditioned. Art historian Alina Payne writes that Brunelleschi "literally turned painting into an epistemic instrument by way of perspective" and that by doing so he "provided a means of representing reality 'correctly,' of representing what is seen *as it is*."[47] Despite Payne's use of quotation marks, she implies—as many have since the fifteenth century—that perspectival paintings are more representative of the true nature of the world. But these commentaries prioritize representations of mathematical representations over others, such as representations of personal or sacred relationships, status, or locatedness, all of which do not rely on geometric perspective but are no less real and meaningful.

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[45] Robert S. Nelson, "Descartes's Cow and Other Domestications of the Visual," *Visuality Before and Beyond the Renaissance*, ed. Robert S. Nelson (Cambridge: Cambridge University Press, 2000), 5.

[46] Nelson notes that Alberti did not reject medieval understandings of vision and instead saw an intimate connection between an observer's eye and the world. Within scientific discourses, Nelson argues that Johannes Kepler and Descartes severed this connection, reflecting Bordo's own stance and highlighting that the development of perspective was not a single moment in front of the Florence Baptistery but rather an ongoing process. Nelson, "Descartes's Cow," 5–6.

[47] Alina Payne, "Introduction," *Vision and Its Instruments: Art, Science, and Technology in Early Modern Europe*, ed. Alina Payne (University Park: Pennsylvania State University Press, 2015), 3.

Cartesian perspectivalism does not represent the world *as it is* but through the values and priorities of those making representations. When considering films like *The Green Planet*, I am less concerned with the presence of a horizon line, a vanishing point, and orthogonal lines (the ingredients of linear perspective), though these are not unimportant. Rather, I am concerned with the legacy of perspective and the advent of humanist visualities, which enforce boundaries between the viewer and the viewer, the subject and the object, and the human and the non-human. In these ways, I see a clear path between Brunelleschi's experiment and Attenborough's gondola ride through the Costa Rican cloud forest.

An appreciation for the social construction of vision, however, helps make sense of counter-visualities that resist such dualities. For some scholars, there is a close relationship between visuality and power, such as Nicholas Mirzoeff, who uses the term to refer to "the overlap between representation and cultural power."[48] In his genealogy of the term, Mirzoeff links visuality with overseers on slave plantations. "Visuality supplemented the violence of authority and its separations," he writes, conceiving of visuality as not just any ideology, but a dominant, if not dominating, one.[49] Adrian J. Ivakhiv, a scholar of environmental thought and ecocinema, however, argues that while visuality may serve controlling forces, "it can also destabilize, dissemble, and jostle. It can set off oscillations in the viewer and the viewed, flood

[48] Margaret Dikovitskaya, *Visual Culture: The Study of the Visual after the Cultural Turn* (Cambridge, MA: MIT Press, 2005), 227.
[49] Nicholas Mirzoeff, *The Right to Look: A Counterhistory of Visuality* (Durham: Duke University Press, 2011), 2.

the subject with emotion, and set off ripples around the object and between the object viewed and the viewing subject."[50] Haraway takes this position when she speaks of an interest in "reclaiming visuality as a becoming-with or being-with, as opposed to surveying-from."[51] Noting that visuality has been blamed for many "evils," media scholar Laura U. Marks argues that "the critique need not be extended to all forms of visuality," distinguishing between instrumental and noninstrumental visualities.[52] Marks argues "that a form of visuality that yields to the thing seen, a vision that is not merely cognitive but acknowledges its location in the body, seems to escape the attribution of mastery."[53] Following Ivakhiv, Haraway, and Marks, l sketch out a model for a destabilizing, noninstrumental visuality premised on botanical-multispecies relationality.

Within avant-garde art and film, there is a long history of critiques of human exceptionalism, dualism, and ocularcentrism. Social scientist Victoria Foster links posthumanism with surrealism, arguing that the latter owes a debt to the former. She writes, for example, that surrealists, "well known for disorienting and subverting the everyday through objects ... often saw objects, matter, as having power and

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[50] Adrian J. Ivakhiv, *Ecologies of the Moving Image: Cinema, Affect, Nature* (Waterloo, ON: Wilfrid Laurier University Press, 2013), 3.
[51] Donna Haraway and Martha Kenney, "Anthropocene, Capitalocene, Chthulhucene," *Art in the Anthropocene: Encounters Among Aesthetics, Politics, Environments and Epistemologies*, ed. Heather Davis and Etienne Turpin (London: Open Humanities Press, 2015), 258.
[52] Laura U. Marks, *The Skin of the Film: Intercultural Cinema, Embodiment, and the Senses* (Durham: Duke University Press, 2000), 131.
[53] Marks, *The Skin of the Film*, 132.

agency."[54] This contrasts starkly with the post-Enlightenment idea of agency being unique to humans. Foster cites Leonora Carrington and her paintings of human-animal hybrids as evidence of surrealist anti-dualism. In Carrington's 1970 essay "What Is a Woman?," she lobs what we could describe as an eco-feminist attack at mastery, exceptionalism, and even the notion of an identifiable "I."[55] Lindsey Richter, a scholar of French literature and surrealism, argues that Man Ray's 1928 short film *L'Étoile de mer* demonstrates a close and sensual vision, like that which I will turn to in this chapter.[56] Art historian Valerie Hellstein writes of an "embodied vision" in the work of Willem de Kooning and other abstract expressionists, noting that "the body—variously in its representation, suggestion and absence—is central to abstract expressionism."[57] These artistic interventions and scholarly interpretations set a precedent for the counter visualities explored in this chapter.

Botanical-Multispecies Visuality

[54] Victoria Foster, "Surreal Encounters: Playing With the More-Than-Human at a Community Farm," *Qualitative Inquiry* 31, no. 1 (2023): 88, https://doi.org/10.1177/10778004231202936.
[55] Leonora Carrington, "What is a Woman?," *Surrealist Woman: An International Anthology*, ed. Penelope Resemont (London: The Athlone Press, 1998), 372–77.
[56] Lindsey Richter, "Reimagining Vision in the Surrealist Cinepoem *L'Étoile de Mer*," *Mosaic: An Interdisciplinary Critical Journal* 54, no. 1 (2021): 23, https://dx.doi.org/10.1353/mos.2021.0002.
[57] Valerie Hellstein, "De Kooning's Embodied Vision and Abstract Expressionism in the 1960s," *Women Singing II 1966 by Willem de Kooning*, Tate Research Publication, 2017, accessed November 6, 2025, https://www.tate.org.uk/research/in-focus/women-singing-ii/de-koonings-embodied-vision.

In his writing on "plant-thinking," philosopher Michael Marder offers insights that help identify the character of a non-humanist visuality premised on multispecies being and the unique character of the botanical. For him, "plant-thinking situates the plant at the fulcrum of its world, the elemental terrain it inhabits without laying claim to or appropriating it."[58] Though this definition is suitable for any kind of multispecies-thinking, it nonetheless helps elucidate a model of botanical-multispecies visuality that adequately accounts for plants without attempting to *become* plants—without denying human perspective and subjectivity. This requires that we tend to a distinction between becoming-plant and becoming-with plants.

Marder's plant-thinking is premised on both an honest and ethical attempt to know plants on their own terms and an understanding of the limits of knowing their worlds. "The idea," he says of his project, "is to allow plants to flourish on the edge or at the limit of phenomenality, of visibility, and, in some sense, of 'the world.'"[59] Noting the long history of Western philosophy treating the vegetal as passive, incomplete, and open-ended, Marder argues that in actuality, "vegetal activity encrypts itself in its modes of appearance by presenting itself in the guise of passivity, which is to say, by never presenting itself as such."[60] We can glean from this that there is something elusive, perhaps even wily, about the botanical. This trait of the botanical is especially challenging to dominant Western humanist epistemology,

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[58] Michael Marder, *Plant-Thinking: A Philosophy of Vegetal Life* (New York: Columbia University Press, 2013), 8.
[59] Marder, *Plant-Thinking*, 9.
[60] Marder, *Plant-Thinking*, 20.

which prioritizes complete knowing and sharp boundaries, especially in encounters with others and the nonhuman.[61] Botanical-multispecies visuality welcomes and embraces the humility that such an awareness brings, resisting totalizing knowledge and the need for definitive answers.

Marder's vegetal philosophy points to another aspect of plant life that challenges the universalism of humanism and Cartesian perspectivalism. He argues that plants are "indifferent to the distinction between the inner and the outer" and that their selves merge "with the external environment," ultimately transcending the "distinction between sameness and otherness."[62] Drawing on feminist thought, specifically that of Val Plumwood, however, I propose that transcending this duality does not render the botanical *umwelt* as one of indistinguishability or oneness. In fact, we know that plants communicate with other plants, respond to stimuli from other beings, attract pollinators, and so on. Plumwood argues that environmental philosophy needs to be able to "stress continuity without drowning in a sea of indistinguishability."[63] This speaks to a legitimate concern regarding blurring or abolishing the lines between human and nonhuman. If we conceptualize this continuity too broadly, do we have any means for making ethical claims about the use

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[61] See Anupam Yadav, "Epistemology Revisited: A Feminist Critique," *Journal of International Women's Studies* 19, no. 6 (2018): 374–81, https://vc.bridgew.edu/jiws/vol19/iss6/24, and Simon Coghlan, "Humanism, Anti-Humanism, and Nonhuman Animals," *Society & Animals* 24, no. 4 (2016): 403–19, https://doi.org/10.1163/15685306-12341416.
[62] Marder, *Plant-Thinking*, 32.
[63] Val Plumwood, "Nature, Self, and Gender: Feminism, Environmental Philosophy, and the Critique of Rationalism," *Hypatia* 6, no. 1 (Spring 1991): 19, https://doi.org/10.1111/j.1527-2001.1991.tb00206.x.

and misuse of nonhumans? In other words, if humans are indistinguishable from nature, is harm committed against nature harm committed against ourselves rather than against others? An ethic and an ontology of relationality answer this dilemma by simultaneously insisting on interdependence as well as some sense of separateness—indistinguishability and complete oneness would not allow for relationships, which necessarily require some level of difference. As Plumwood writes, "that people's interests are relational does not imply a holistic view of them."[64] As an example, she writes that "although some of the mother's interests entail satisfaction of the child's interests, they are not identical or even necessarily similar." A view of the self-in-relationships, Plumwood believes, avoids both dualism and holism. This account, she explains, "avoids atomism but … enables a recognition of interdependence and relationship without falling into the problems of indistinguishability." Though Plumwood writes about human–nonhuman relationships more broadly, this ontological perspective can be applied to relationships between plant and non-plant life. The vegetal state Marder describes above is precisely the sense of self-in-relationship advocated by Plumwood. The botanical then, is a mode of being that is not only dependent upon others (as all life is) but one that simultaneously makes interdependence *and* difference eminently visible and tangible. Moreover, Marder's plant-thinking demonstrates the suitability of the botanical to a multispecies visuality centered on feminist and counter-humanist ethics. The unique nature of plants, Marder explains, "enjoins [them] to be the passages, the outlets, or the media for the

[64] Plumwood, "Nature, Self, and Gender," 20.

other," letting "the other pass through them without detracting from the other's alterity."[65] That is to say, the botanical is especially attuned to the other without appropriating, dominating, or assimilating them. Plant-thinking and botanical-multispecies visuality are simultaneously characterized by both openness and reservation: botanical-multispecies visuality is appreciative of and dependent upon difference while also accepting of the limits of knowing the other.

Writing about the possibility opened by film technology to see the otherwise hidden world of plant movement, Janet Janzen acknowledges that "the capacity to see plant movement did not always lead to a shift in the perception of plants. Rather, alongside the positive and even utopian reception of plant life as mobile and sentient beings, a more conservative perspective persists."[66] This more conservative perspective is one of instrumentalization and subordination of plants, a decidedly non-multispecies perspective. What this illustrates for us is that nurturing reciprocal and humbling relationships with plants does not necessarily follow from a greater understanding—in the Western scientific sense—of their worlds and lives. Environmental geographer Hannah Pitt draws similar conclusions from her research with human participants in community gardens. While admittedly of limited scope, her time with the gardeners led her to the conclusion that "practices and places which foster encounters with nonhumans do not necessarily promote ethical regard for

[65] Marder, *Plant-Thinking*, 40.
[66] Janet Janzen, *Media, Modernity, and Dynamic Plants in Early 20th Century German Culture* (Leiden, Netherlands: Brill Rodopi, 2016), 3.

them."[67] That is to say, though gardeners spent considerable time in close proximity with nonhuman inhabitants of the garden, dominating, adversarial, distant, or neglectful relationships still persisted. "More important than encounters teaching people to care for specific nonhumans," Pitt argues, "are those which promote understanding of the interdependent nature of more-than-human communities."[68] A botanical-multispecies visuality, then, does not just show us what it is like to be a plant—it may not show us that all; it may even eschew this narrow definition of proximity—but it does tend to what it means to be in an ongoing and interdependent relationship with plants.[69]

The Role of Haptic Visuality and Embodiment

Critiques of vision often focus on seeing and being seen as a form of distance, such as in the distant, supposedly objective gaze of Cartesian perspectivalism. But as some argue, particularly feminist scholars, vision can also be a form of proximity. Haraway, for example, writes that "vision can be figured as touch, not distance, as entwined with, or negatively curving in loops and frills, not surveying from above."[70] Laura U. Marks writes "that vision should have ceased to be understood as a form of

[67] Hannah Pitt, "Questioning Care Cultivated through Connecting with More-Than-Human Communities," *Social & Cultural Geography* 19, no. 2 (2018): 269, https://doi.org/10.1080/14649365.2016.1275753.
[68] Pitt, "Questioning Care," 270.
[69] An understanding of multispecies relationality may be necessary but not sufficient for countering domineering forms of relating with nonhumans. The political and economic systems that reinforce human exceptionalism apply pressure that can override the ethics nurtured by an understanding of interdependence.
[70] Haraway and Kenney, "Anthropocene, Capitalocene, Chthulhucen," 258.

contact and instead become disembodied and adequated with knowledge itself is a function of European post-Enlightenment rationality," noting the historical (and perhaps localized) rather than biological basis for this separation.[71] Given the entangled and embodied nature of plant-human relations, haptic visuality is a key component of botanical-multispecies visuality. Marks, who has contributed significantly to the theory of haptic visuality, notes that "haptic *perception* is usually defined as the combination of tactile, kinesthetic, and proprioceptive functions, the way we experience touch both on the surface of and inside our bodies."[72] However, "in haptic *visuality*," she continues, "the eyes themselves function like organs of touch." That is to say, though the eyes are not receivers of touch in the literal sense, they receive and recall the experience of touch, and its constituent states of proximity and intimacy. Compared to optical visuality, in haptic visuality, Marks argues, "the viewer's body is more obviously involved in the process of seeing."[73] With haptic visuality, Marks explains, "the viewer has to work to constitute the image, to bring it forth from latency."[74] Marks' analysis of haptic film pays much attention to decaying, blurry, or otherwise difficult-to-decipher imagery. And though these are not central to *Which Plants*, Marks' broader theory is helpful in understanding the tactility in *Which Plants* and *Lichen*, which invites viewers into an intimate and embodied

[71] Laura U. Marks, *Touch: Sensuous Theory and Multisensory Media* (Minneapolis: University of Minnesota Press, 2002), xiii.
[72] Marks, *Touch*, 2.
[73] Marks, *Touch*, 3.
[74] Marks, *Touch*, 13.

spectatorship. For my purposes, I am more concerned with closeness than with decoding, though proximity requires its own kind of work on the part of viewers.

Engagements with screen media are often treated as passive and disembodied. Michael Heim, for example, writes in his book *The Metaphysics of Virtual Reality*, that "at the computer interface, the spirit migrates from the body to a world of total representation. Information and images float through the Platonic mind without a grounding in bodily experience."[75] Though writing about digital spectatorship, Heim's argument relies on a broader treatment of all vision as disembodied—representative of a bias in Western thought that classifies vision and rationality above the body and more base senses. Art historian Kate Mondloch addresses a related paradox of media spectatorship in museum and gallery settings, writing that "this mode of viewing is simultaneously material (the viewer's phenomenological engagement with actual objects in real time and space) and immaterial (the viewer's metaphorical projection into virtual times and spaces)."[76] This is a productive paradox, as it can remind viewers of "the necessarily embodied and material nature of all media viewing."[77] That is, despite Heim's claim, one can never leave their body, and any and all sense experiences are definitively embodied. This is counter to the logic of objective, disembodied vision proffered by Cartesian perspectivalism. Haraway has called for a "feminist writing of the body that metaphorically

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[75] Michael Heim, *The Metaphysics of Virtual Reality* (Oxford: Oxford University Press, 1993), 101.
[76] Kate Mondloch, *Screens: Viewing Media Installation Art* (Minneapolis: University of Minnesota Press, 2010), 17.
[77] Mondloch, *Screens*, 19.

emphasizes vision again, because we need to reclaim that sense to find our way through all the visualizing tricks and powers of modern sciences and technologies."[78] On the problem of objectivity, Haraway insists that "only partial perspective promises objective vision. This is an objective vision that initiates, rather than closes off, the problem of responsibility for the generativity of all visual practices."[79] Haraway's feminist epistemology shares much in common with Marder's plant-thinking and can likewise serve as a model for botanical-multispecies visuality that is simultaneously open and reserved. This partial perspective requires an appreciation for the embodiment of vision and specifically on a haptic visuality that can account for the tactical and entangled relationships between plants and humans. Media reflecting botanical-multispecies visuality call attention to viewers' embodiment and their relationality with the plant world, shaking them from any illusion that their spectatorship is objective, distanced, or disembodied. Noting that some think of the haptic as a feminine form of perception, Marks challenges this limiting and perhaps essentialist reading, instead writing that she "[prefers] to see the haptic as a feminist visual *strategy*, an underground visual tradition in general rather than a feminine quality in particular."[80] This is a strategy that we see employed in several films that challenge the "god-trick" of visual strategies like those evident in documentaries like *The Green Planet*.[81]

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[78] Haraway, "Situated Knowledges," 189–90.
[79] Haraway, "Situated Knowledges," 190.
[80] Marks, *Touch*, 7.
[81] Feminist art history has long been concerned with touch. For an overview of some of this history see Peggy Phelan, "The Return of Touch: Feminist Performances,

Perspectivalism versus Entanglement

Which Plants to Teach Ethics to Artificial Intelligence, a 2019 short documentary by French-American artist Suzanne Husky, begins with imagery from the point of view of a robotic device surveying an agricultural field.[82] We see rectangular outlines marking both sprouts and full-grown plants as the robot scans the terrain. Another shot includes a cascade of numbers—measurements of some sort—as the robot sizes up a plant stock. With these shots, the film introduces viewers to what we can see as a perspectival visuality. The robots see and picture the lands as resources, quantifiable and exploitable. The AI's visual system does not represent the plants as fellow beings or neighbors; they are presented as inert, as mere units to be measured, mapped, and cataloged. Husky explains that these opening scenes—and the many like them that appear throughout the film—were taken directly from marketing material for agricultural technology (AgTech) firms.[83] So while these visualizations of the AI's perspective resemble dystopian visions from science fiction,

1960–80," *Wack! Art and the Feminist Revolution*, ed. Lisa Gabrielle Mark, 346–61 (Cambridge, MA: MIT Press, 2007).

[82] Husky is a multidisciplinary artist working in media ranging from drawing to textiles to film. *Which Plants* was created as part of her with the art and technology collective Coven Intelligence Program, which included efrén cruz cortés and Margaretha Haughwout. In 2020, the film was exhibited as part of *AFTER LIFE (we survive)* at the Yerba Buena Center for the Arts in San Francisco and *The Shape of a Circle in the Mind of a Fish: The Understory of the Understory* an art and ecology festival hosted by Serpentine Galleries in London. Due to the ongoing COVID-19 pandemic, the Serpentine festival was entirely online, and the film was a part of the online component of AFTER LIFE, which was otherwise only viewable from the exterior of the museum. *Which Plants* has primarily circulated online since this time.

[83] Suzanne Husky, interview with the author, May 27, 2022.

such as the POV of cyborgs in *The Terminato*r films, this is actually a selling point for these firms; this is AgTech's vision for the future.

Brenna Bhandar, a scholar of property law, has persuasively linked "scientific techniques of measurement and quantification [and] economic visions of land and life rooted in logics of abstraction," along with racial politics, with the production of property law and racial subjects in settler colonial contexts.[84] These scenes are a masterclass in this logic of abstraction and quantification, and Bhandar urges us to see their role in reproducing not just a particular economic system but also conceptions of law and subjecthood that undergird that economic system. This is also the visuality of rational humanism transplanted to nonhuman robots. Though robots are presented in marketing materials and science fiction as nonhuman beings, their human genesis leaves them tethered to their creators. After all, robots and the artificial intelligence that guide them are premised on human logics, values, and biases, so it is no wonder that the robotic visuality mirrors that of the dominant cultures from which they emerge. Feminist scholars Neda Atanasoski and Kalindi Vora write of *technoliberalism*, which they call, "a version of universal humanity [that] heralds a postrace and postgender world enabled by technology, even as that technology holds the place of a racial order of things in which humanity can be affirmed only through degraded categories created for use, exploitation, dispossession, and capitalist

[84] Brenna Bhandar, *Colonial Lives of Property: Law, Land, and Racial Regimes of Ownership* (Durham: Duke University Press, 2018), 6.

accumulation."[85] While the production of racial subjects of which Bhandar, Atanasoski, and Vora write is beyond the scope of this chapter, they nonetheless articulate how the logics that serve as the foundation for perspectival visuality, such as represented in the AgTech sections of *Which Plants*, reproduce alienation, separation, and exploitation. Following the 19th-century art historian Alois Riegl, Marks believes that "the ascendancy of optical representation in Western art represents a general shift toward an ideal of abstraction."[86] Both abstraction and the optical are at a zenith in *Which Plants* AgTech scenes.

The film's heavy reliance on direct-address interviews with herbalists, ethnobotanists, and witches is an antithesis of this visuality. In these interviews, the subjects look at and speak directly to the camera, as opposed to the off-camera interview style where speakers look away from the camera, which implies distance between themselves and the viewers. In his book on directing documentary films, Michael Rabiger suggests that direct-address interviews place "the audience in direct relationship with the interviewee."[87] In one of the first such interviews of the film, herbalist Atava Garcia Swiecicki states that "plants aren't trying to do things for profit," offering a segue from the AgTech vision the film opens with as well as an alternative for plant-human relationships based on reciprocity, care, and intimacy. In fact, Husky structures the film in such a way that highlights the intimacy between the

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[85] Neda Atanasoski and Kalindi Vora, *Surrogate Humanity: Race, Robots, and the Politics of Technological Futures* (Durham: Duke University Press, 2019), 13.
[86] Marks, *Touch*, 5.
[87] Michael Rabiger, *Directing the Documentary* (Burlington, MA: Focal Press, 2015), 455.

viewer, her interviewees, and plants. AgTech footage, such as that described above, breaks up and separates the interviews stretching out the tension between the two visualities for the entirety of the film.

In one interview, Aya, an herbalist from Maine, suggests that burdock could best be suited to teaching ethics to AI because its seed dispersal strategy—characterized by sticky, hitchhiking burs—reflects a knowing of both when to latch on and when to let go. This scene epitomizes the intimate and haptic quality of the film's interviews. Aya stands close to the camera in a round greenhouse with a tarped roof (fig. 1.2). It is raining, and the sound of the rain pitter-pattering against the tarp is palpable; it feels as important to the interview as Aya's commentary. Condensation has built on Aya's windbreaker jacket, and her hair is damp. An assortment of potted plants fills the background, and Aya stands next to plants with tall stalks or branches. Inadvertently, Aya continuously brushes against one of these stalks as she speaks animatedly with her hands. This scene creates a sense of presence and intimacy, entangling the viewer in the "world of the film," dissolving the boundary between viewer and viewed and thus complicating any notion of the "world of the film" that is distinct from its spectatorship. The haptic nature of this scene enacts an indifference "to the distinction between the inner and the outer," as Marder describes the vegetal state.



FIGURE 1.2. Still from *Which Plants to Teach Ethics to Artificial Intelligence*, 2019, directed by Suzanne Husky. Reproduced with permission from Suzanne Husky.

Touch is not regularly considered an essential quality of screen media, such as film and virtual reality, for which there is often considered a sense of disembodiment. Even in more traditional visual arts, touch may be seen as anathema, at least for spectatorship. Consider the directive at museums and galleries not to touch any of the artwork. If there is a hierarchy of senses in Western art and thought, touch, which can be seen as defiling or base, rests below sight.[88] But, as feminist science and technology studies scholar María Puig de la Bellacasa writes, "to think with touch has a potential to inspire a sense of connectedness that can further problematize

[88] Carolyn Korsmeyer, *Making Sense of Taste: Food and Philosophy* (Ithaca: Cornell University Press, 2002), 11–37.

abstractions and disengagements of (epistemological) distances, the bifurcations between subjects and objects, knowledge and the world, affects and facts, politics and science."[89] So touch is essential to any visuality that hopes to counter the visualities of humanism. Moreover, touch is essential to plant-human relations, and when we consider botanical-multispecies visuality, we must identify a model of visuality that accounts for and embraces the role of touch and proximity.

While plants can live their lives without the human species, the inverse is not true. And when we engage and interact with plants, unlike with most animals, these are most often haptic encounters. From the vegetables we eat, the trees we trim or cut down, the roots we bury or dig up, the burs that cling to our legs, the cotton we wear, the flowers we pull closer to smells, the house plants we nurture, the mosses we caress, the dandelions we unthinkingly trample, the trunks we rest against, to the air we breathe, touch is an operative sense. It is, of course, not just these singular encounters that are embodied and haptic but also extended relationships and practices. As archaeobotanist Marijke van der Veen writes, "another form of embodiment is that generated by the routine, day-to-day engagement with plants, in the sense of gathering, tending, cultivating or growing plants."[90] Puig de la Bellacasa further connects these sorts of practices with the production of knowledge, writing that "haptic engagement conveys an encouragement for knowledge and action to be

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[89] María Puig de la Bellacasa, *Matters of Care: Speculative Ethics in More than Human Worlds* (Minneapolis: University of Minnesota Press, 2017), 97.
[90] Marijke van der Veen, "The Materiality of Plants: Plant–People Entanglements," *World Archaeology* 46, no. 5 (2014): 804, https://doi.org/10.1080/00438243.2014.953710.

crafted *in touch* with everyday living and practice."[91] Likewise, Marks argues that "meaning is made in the material connection between our bodies, the body of the film, and the bodies, animals, vegetable, and mineral, recorded by the film."[92] In Aya's greenhouse, we are immersed into a site of these practices described by van der Veen and Puig de la Bellacasa, but the film itself represents such a day-to-day engagement with plants on the part of Husky and the sharing of knowledge generated in touch. In this case, media production is an embodied relationship with the botanical.

Marks also identifies several ways in which films bring about olfactory associations, one of which is through sound, especially accompanied by visual close-ups. Arguing that sound is a sense "closer" to the body than sight, she suggests that sound, including off-screen sound, "brings us closer to the image, almost close enough to smell."[93] Marks cites Tran Anh Hung's 1993 narrative film *The Scent of Green Papaya* as particularly employing this approach. In one exemplary scene from this film, a young girl receives instruction on cooking. When green vegetables are tossed into a wok with hot oil, the overpowering sound of sizzling accompanied by a close-up shot of the vegetables as they are tossed strongly recalls a particular scent that neither the image nor sound alone would conjure.

The multisensory quality of sound is evinced in Aya's interview, where the off-screen sound evokes the smell of dampness, especially of damp plants, regardless

[91] Puig de la Bellacasa, *Matters of Care*, 96.
[92] Marks, *Touch*, 122.
[93] Marks, *Touch*, 117.

of whether viewers know the specific smells of the plants in Aya's greenhouse. These associations further blur the boundary between the world of the film and the world of audio-visual spectatorship. This is done especially through reeling in viewers with their own memories and personal associations. Marks maintains that audio and visual representations activate "a shared cultural symbolic," providing a common experience that filmmakers can depend upon. But smell, she writes, "provokes individual stories, calling upon semiotics that is resolutely specific."[94] That is to say, the smell of a damp greenhouse or garden may be more likely to transport someone to a specific memory than an image or a sound, which is more likely to recall general ideas or concepts. So, by evoking olfactory sensations, even through audiovisual alchemy, Husky resists the illusions of disembodied spectatorship and of objective, distant storytelling—their memories and their bodies are called upon in this scene.

Erotics Against Dualism

Marks argues that while what she calls optical visuality "requires distance and a center … in a haptic relationship our self rushes up to the surface to interact with another surface. When this happens there is a concomitant loss of depth—we become amoebalike, lacking a center, changing as the surface to which we cling changes. We cannot help but be changed in the process of interacting."[95] Haraway argues similarly

[94] Marks, *Touch*, 118–119.
[95] Marks, *Touch*, xvi.

that touch "peppers its partners with attachment sites for world making."[96] Puig de la Bellacasa also writes that "touching is not a promise of enhanced contact with 'reality' but rather an invitation to participate in its ongoing redoing and to be redone in the process."[97] This means that we cannot walk away from a haptic encounter unchanged. Though these changes may be great or small, positive or negative, the encounter is nonetheless charged with possibilities and thus antithetical to notions of disembodied spectatorship or relationality. Marks, however, raises a similar concern to Plumwood, noting that "to lose all distance from the world is to die a material death, to become indistinguishable from the rest of the world."[98] Are haptic encounters, then, sites of erasure? Does the lack of a center, like a medieval painting for Bordo, absorb subjects? What then happens to their differences? Erotics provide one possible solution for Marks. She writes that "the ability to oscillate between near and far is erotic," as is "being able to become an object with and for the world, and to return to being a subject in the world."[99] Proximity alone is not erotic; as Pitt found in community gardens, proximity doesn't necessarily result in care. And, of course, proximity is also the domain of violence. But proximity without control or erasure, in Marks' estimation, creates the conditions for eroticism. We see something similar in Marder's description of the nature of plants as being "the passages, the outlets, or the media for the other" that let "the other pass through them without detracting from the

[96] Donna J. Haraway, When *Species Meet* (Minneapolis: University of Minnesota Press, 2008), 36.
[97] Puig de la Bellacasa, *Matters of Care*, 117.
[98] Marks, *Touch*, xvi.
[99] Marks, *Touch*, xvi.

other's alterity." We might imagine, then, that for Marks plants create ideal conditions for erotic encounters.

In the film environment, no matter how haptic the experience, the spectator is never fully absorbed into the film. Immersion may be momentary and/or metaphorical, and the subject will inevitably return to their role of spectator, if not partially holding onto it at all times. For these reasons, the haptic film seems primed to foster an environment where the viewer oscillates between subject and object—or better yet, an environment that complicates the seeming clarity between these two positions. As Puig de la Bellacasa writes, "Touching is also called upon as the experience par excellence where boundaries between self and other are blurred."[100]

Hong Kong–based artist Zheng Bo typifies a haptic and erotic visuality in his video series *Pteridophilia* (2016–present), which explores queer ecosexual relationships between people and ferns in a Taiwanese forest.[101] Set in a lush forest, *Pteridophilia 1* (2016) features six nude men who stroke, kiss, rub, and roll around in ferns for the duration of the seventeen-minute, dialogue-free film. In the opening scene, the men are grouped close together at the midpoint of the wide shot, as if they

[100] Puig de la Bellacasa, *Matters of Care*, 96.
[101] Artists Annie Sprinkle and Beth Stephens popularized the term *ecosexual* and offer a nine-part definition that includes, "a new sexual identity," "an environmental activist strategy," "a person who finds nature romantic, sensual, erotic, or sexy, which can include humans or not," and "a person who imagines sex as an ecology that extends beyond the physical body." Their ninth definition is, "other definitions as yet to be determined," and this reflects the expansiveness that Sprinkle, Stephens, and many ecosexuals attribute to the term. Annie Sprinkle, Beth Stephens, and Jennie Klein, *Assuming the Ecosexual Position: The Earth as Lover* (Minneapolis: University of Minnesota Press, 2021), 2.

just appeared at this spot, before dispersing in their own directions. *Pteridophilia 1* does not include many extreme close-ups, like those in *The Scent of Green Papaya*, and these wide shots that emphasize the forest dominate, alongside medium shots focusing on individual performers. But a forest is not a wok full of vegetables, and we can consider these wide shots as representing a form of closeness given the density of the forest. Even in these establishing shots—especially in them—there is a sense of being enveloped by the forest. Distance and alienation do not follow from the fact that the shot is wide and includes a lot of visual information. In fact, during these scenes, viewers may imagine the ferns that would undoubtedly be brushing against their skin if they were standing where the camera is. This sensation is aided by the non-stop sound of birds, insects, and water; thus, these scenes function similarly to the cooking of vegetables but with a different visual approach that accounts for the uncountably larger number of multispecies subjects present.

While the wide shots emphasize the subjectivity of the forest and its ferny inhabitants, the medium and close-up shots bring us closer to the men. Here we see their facial expressions, passion, and even ecstasy. In one scene, one of the men rubs an overhanging fern frond against his face (fig 1.3). His movements are slow and consumed, and his deep breathing is one of the few sounds to break through the ambient sounds of the forest. There is a rich tactility in these scenes, and this is no doubt emphasized by the varied and unique texture of ferns, which are elicited by the repetitive movements of the actor. In an interview with Zheng, ecosexual performance artist Annie Sprinkle asks how the filmmaker got the performers into

these "erotic vibratory states." Though the series clearly draws on the genre of pornography, Zheng notes that none of the performers had worked in the field, and some were not even actors. "The reason that they could get into such a state," Zheng explains, "is that the forest where we shot the film was just so beautiful, so dense, so sensual, so tactile."[102] The tactility of the forest and its plants, then, had a direct impact on the actors' performances, which perhaps would have been entirely different if performed against a green screen or in a virtual environment. This means that the plants play a material role in the production of the film, not simply as backdrops, and not only as fellow subjects of the film, but also as co-creators, as crew members of sorts. The importance of this haptic relationship translates well to the screen, and we can see the extension of this haptic relationship with the ferns to the viewers.



FIGURE 1.3. Still from *Pteridophilia 1*, 2016, directed by Zheng Bo. Reproduced with permission from Zheng Bo.

[102] Bo Zheng, Beth Stephens, and Annie Sprinkle, "A Conversation between Three Ecosexuals," *The Routledge Companion to Contemporary Art, Visual Culture, and Climate Change*, eds. T.J. Demos, Emily Eliza Scott, and Subhankar Banerjee (New York: Routledge, 2021), 167.

Switching between these scenes of proximity and distance in the forest represents the nearness and farness that is characteristic of the erotic for Marks. The viewer is both a subject of a haptic-botanical experience and is at times removed from the experience, viewing it from a distance but a distance that is unstable and constantly disrupted. As Puig de la Bellacasa writes of "touch as vision," the experience of watching *Pteridophilia 1* "[accentuates] both the attraction of closeness as well as awareness of alterity."[103] This film series helps make clear the relationship between haptic visuality and the erotic, but for Marks, the erotic is not defined by or limited to certain content, such as sexual subject matter. "Haptic images are erotic regardless of their content," she writes, "because they construct a particular kind of intersubjective relationship between beholder and image."[104] What is specifically erotic about haptic visuality, she further explains, is "respect for otherness, and concomitant loss of self in the presence of the other."[105] In this, we again hear echoes of Marder's description of the nature of the vegetal. What is transparently erotic in *Pteridophilia* can also be found in *Which Plants*, despite the film's very different subject matter. This eroticism is a direct challenge to the dualisms and anthropocentrism of humanist visuality.

Humble Relationality and the Spectacle of the Individual

[103] Puig de la Bellacasa, *Matters of Care*, 115.
[104] Marks, *Touch*, 13.
[105] Marks, *Touch*, 20.

One of the unexpected, and perhaps seemingly paradoxical, aspects of *Which Plants* is that it does not prominently feature footage of plants, including those discussed by the interviewers. No burdock plant is shown in Aya's interview, and Husky didn't include additional footage of the plant. An interviewee named Phoenix discusses the western red cedar from within a house, with low houseplants in the background but no cedar in sight. Discussing one of the challenges of creating this film, Husky asks, "How do you translate the scent and the touch and everything that a plant gives you with the screen?"[106] Faced with this impossible task, Husky chose to hold back. Her focus is not on replicating specific sensual (including visual) experiences with plants but on the broader relationships with plants. Of course, these relationships are eminently embodied. But Husky does not devalue the stickiness of a burdock bur, the scent of cedar, nor the sight of the latter's magnificent height. Rather, she acknowledges the limitations of her medium and exhibits the kind of humility that is a cornerstone of botanical-multispecies visuality by opting to not try to recreate such experiences.

Which Plants is not devoid of imagery of the proposed ethics teachers, nor do I suggest that botanical-multispecies visuality must avoid such visuals. Pistil Paeonia, a witch and artist from France, discusses the knowledge of wild angelica while sitting in front of a thicket of the plant. She explains that wild angelica taught her to seek consent when interacting with plants, describing the plant as imposing respect "without authority, without force, without brutality." Paeonia strokes the grass in

[106] Husky, interview.

front of her as she sits cross-legged on it (fig. 1.4). She speaks of, and her body language announces, a deep and personal relationship with wild angelica, representing the entangled but non-appropriative character of botanical-multispecies visuality—a becoming-with angelica rather than a becoming-angelica.

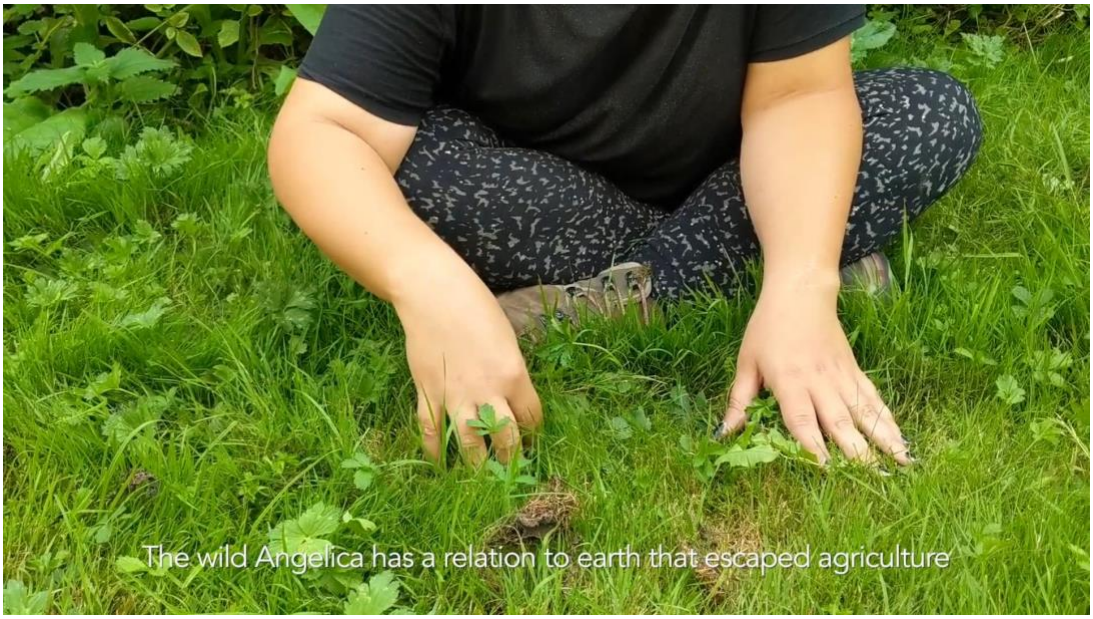

FIGURE 1.4. Still from *Which Plants to Teach Ethics to Artificial Intelligence*, 2019, directed by Suzanne Husky. Reproduced with permission from Suzanne Husky.

Some might point to Paeonia's conversation—and perhaps the premise of Husky's film altogether—as anthropomorphic. Paeonia talks about wild angelica as she might talk about a human teacher, and her interview exemplifies a kind of erotic described by Marks, suggesting an equivalence of subjecthood between the person and the plants. The charge of anthropomorphism can be used both as a slur to designate unscientific or magical thinking and as a critique of anthropocentrism. That

latter charge would accuse Paeonia and Husky of seeing plants through uniquely human lenses and denying them their plantness. But anthropocentrism and anthropomorphism are not the same. Historian of science Lorraine Daston explains that when anthropomorphism became suspect in early modern Europe it was precisely because it was a *threat to* anthropocentrism. The seventeenth-century English naturalist Robert Boyle, for example, "worried that endowing nature with too much wisdom and foresight might both encourage idolatrous worship of the sun, moon, and stars and also discourage the exploitation of nature for human gain."[107] So if Paeonia and Husky partake in anthropomorphism they do so in an attempt to blur, not shore up, the boundaries between the human and the non-human. This is accomplished through self-aware and humble relating to other subjects, in contrast to the more imperious visuality of *The Green Planet*.

Several minutes toward the end of the film feature Margaretha Haughwout, an herbalist, permaculturist, and programmer, who stands against a hawthorn tree, which she describes as "a true multispecies food forest tree." While Haughwout extolls the tree's benefits to humans and nonhumans alike, Husky's camera explores the tree's crown, giving viewers the most in-depth view of any of the plants discussed by the film's interviewees. The camera returns to Haughwout with a low angle shot that points upwards, spotlighting both the speaker and the tree behind her as equals (fig. 1.5). This interview is followed by a final montage of AgTech footage featuring

[107] Lorraine Daston, "Epistemic Images," *Vision and Its Instruments: Art, Science, and Technology in Early Modern Europe*, ed. Alina Payne (University Park: Pennsylvania State University Press, 2015), 29.

drone and satellite technology. *Which Plants* then ends with a single shot in a dense forest setting. Beginning at the base of a large, gnarled, and branching tree, the camera slowly climbs to the forest's canopy. It is difficult to determine exactly where one plant begins and another ends as trees, vines, and mass form a massive web of life, which is paired by a voiceover from ethnobotanist Kathleen Harrison about the wisdom of ancient trees that results from their numerous relationships with other plants, animals, and fungi. Though these three scenes—with wild angelica, hawthorn, and the forest—differ from the intimate, human-oriented interviews that comprise much of the film, they share an ethic of relationality that links them with botanical-multispecies visuality.



FIGURE 1.5. Still from *Which Plants to Teach Ethics to Artificial Intelligence*, 2019, directed by Suzanne Husky. Reproduced with permission from Suzanne Husky.

Husky explains how the realities of her production, with budgetary and time constraints, didn't allow her to, for example, film a close-up of a slug walking along a branch. Such shots are familiar in high-budget nature documentaries, but Husky thinks of them as "eye candy" and part of a culture of spectacle to which she is resistant.[108] "I cannot get myself to go make that pretty shot," she explains. Husky's more plant-focused scenes, however, also defy this kind of spectacle, which is often focused on an individual plant or animal. The three scenes described above visualize the entanglement of botanical-multispecies relations, favoring humble relationality over the spectacle of the individual or the hyper-specific. While *Which Plants* is professionally and artfully produced, it possesses a rough, non-spectacular character that lends itself to humility and intimacy.

Which Plants produces knowledge, but it also avoids a kind of encyclopedic knowledge that surveys from above, as Haraway writes. Its knowledge is looping, questioning, and unpunctuated. For Husky, even the question that structures the film is not meant to produce a definitive answer. In fact, as someone with a background in agroecology, Husky is more than skeptical of proposed AgTech solutions. "I don't like tech," she says firmly, "I'm at a point where I don't feel like compromise."[109] In line with the wily nature of plants, Husky's question to her interviewees wasn't meant to generate solutions for AgTech corporations but was rather meant to enact a kind of performative knowledge. "Re-enchant my life," she reframes the question to me in

[108] Husky, interview.
[109] Husky, interview.

our interview, "and tell me stories about a plant being a teacher and giving you something." The question also performs a critique of AgTech and the ways of knowing and seeing associated with it. By asking which plants could teach ethics to AI, the film orients viewers to entertain a critique of humanistic knowledge. Those unfamiliar with the discourse on plant knowledge are put in a position to consider epistemologies beyond the exclusive domain of the human. As a work reflecting botanical-multispecies visuality, the film doesn't do the work of imparting the knowledge of plants, that is after all the work of plants, but it visualizes what it is like to be entangled with plants, to be touched by plants, to be humbled by plants, and to become-with plants.

The Unknowability of Lichens

Which Plants is an illustrative but nuanced model for botanical-multispecies visuality that highlights its challenge to humanist visuality and epistemology. There is, however, no single aesthetic approach to botanical-multispecies visuality and its features can manifest in ways very different from *Which Plants*. For example, *Lichen* (2019), a short IMAX documentary by Anishinaabe filmmaker Lisa Jackson, looks and feels quite differently than *Which Plants.* Dedicated to lichen, which are symbiotic composites of a fungus and an alga and/or cyanobacterium,[110] the eleven-minute film is composed entirely of shots of individual lichen and their substrates

[110] Toby Spribille et al., "Evolutionary Biology of Lichen Symbioses," *New Phytologist* 234, no. 5 (June 2022), 1566: https://doi.org/10.1111/nph.18048.

seemingly floating in a black void.[111] Though captured with high-tech equipment, these images are not eye candy but are a means to explore the relationality that is the essence of lichen. One organism, identified as Greylandic Map, appears to include thousands of dark and light charcoal-colored bubble-like forms accompanied by deep black structures that resemble desiccated wood ear mushrooms (fig. 1.6). The substrate appears to be a stone, but it is different to disentangle the constituent parts of what we see—and as will be explained, with lichens such an endeavor is folly. In total, twenty-two different lichens are presented in this way. The camera captures the lichens at 100 to 300 times magnification as they move on unseen sliders and rotating plates.[112] The seductive images reveal worlds that are invisible to the naked eye, transforming lichens from organisms that are often overlooked (or unknown) into subjects of fascination. The lichens are listed in order of appearance in the credits, as is common with human actors, suggesting a collaborative or agential role in the film's creation. A score from the late ambient music composer Hiroshi Yoshimura lends a science fiction air to the film, and lichenologist Trevor Goward provides a voiceover

[111] *Lichen* was one of five short films commissioned by the XL Outer Worlds to celebrate the fiftieth anniversary of the invention of IMAX. The film premiered, along with the other XL Outer Worlds films, in April 2019 at the Images Festival in Toronto. It has screened at other film festivals, such as the Sundance Film Festival (2020), the San Francisco Film Festival (2020), the imagineNATIVE Film and Media Arts Festival (2020), and more. In 2023, the film was included in an episode of the PBS show *Native Shorts*. A re-imagined multi-media installation at the Benway in Toronto in 2023.

[112] Sonia Shechet Epstein, "Algae and Fungi Meet Film: Sundance Short *Lichen*," Sloan Science and Film, January 31, 2020, https://scienceandfilm.org/articles/3280/algae-and-fungi-meet-film-sundance-short-lichen.

that muses on the nature of lichen. In reviewing the film, one blogger wrote of Goward's narration that it "was more philosophical than scientific, which struck me as rather strange for a documentary about living things."[113] This comment captures the expectations of nature documentaries and the primacy of Western science in knowing and relating to other forms of life.



FIGURE 1.6. Still from *Lichen,* 2019, directed by Lisa Jackson. Courtesy of the filmmaker and Moving Images Distribution.

Like *The Green Planet*, *Lichen* is filmed with the help of cutting-edge visual technology, but the outcomes of these technologies are very different in the two films.

[113] steve98052, "Rounding up the Usual Suspects," LiveJournal (blog), April 10, 2021, https://steve98052.livejournal.com/2418613.html.

While *The Green Planet* advances a familiar visuality—albeit more spectacularly—Jackson explains in an interview with Goward and science writer Erica Gies that *Lichen* "is literally trying for a new perspective."[114] For his part, Goward seems to have grappled with what he saw in the film, saying in the same interview that watching the film was like "looking at a postapocalytpic scene." Of course, for a lichenologist like Goward, there is nothing inert, dead, damaged, or apocalyptic in lichen, so why the catastrophic association? One of the most distinctive, seemingly contradictory, features of *Lichen* is the absence of the land in which these lichen live. For someone who spends their career on the ground, in mud, and among trees looking at lichen, this absence must have been initially jarring. Indeed, Goward explains in the film's narration that "every lichen has a conversation with place." Without place, then, what remains of a given lichen? But in the interview, Goward explains that "looking at these beautiful lichens and their substrates from different perspectives loosens up the viewer to the idea of accepting other ways of seeing things." The exclusion of specific places, then, is not intended as a denial of their importance to lichen *umwelten*, but rather it is a specific visual strategy to call attention to certain qualities of lichen. Jackson did not attempt a comprehensive explanation of all things lichenous. Still, given the importance of place to Jackson's work (see Chapter 3) and the Indigenous science she draws upon, this absence is conspicuous. But by not focusing on larger ecosystems, the film guides viewers into seeing place in a different

[114] Erica Gies, "What Lichens Can Teach Us," *Scientific American*, January 29, 2020, https://blogs.scientificamerican.com/observations/what-lichens-can-teach-us/.

light. For example, Jackson says that some of the lichens "felt like they were their own tiny planets," noting a level of complexity that is clearly visible in the film.[115] The lichens become places. And yet, they are also selves. Selves become places, and places become selves, upending the humanist logic that sees the self as something separate from place that acts autonomously within it.

Goward explains in the film that "the lichen is the outward manifestation of process; it's variable. It's not a thing; it's a relationship." True to this trait, the film's images are incredibly dense with life (fig. 1.7), similar to the closing shot of *Which Plants* in that the boundary between species is difficult to identify. *Lichen* pictures its cast as entire worlds within themselves, selves-in-relationships to the extreme. Lichens are often described simplistically as if they are the union of one fungus and one alga, but in reality, lichens can comprise thousands—and according to biologist Anne Pringle, possibly tens of thousands—of different species.[116] Laurie Palmer, an artist who works with lichen, explains that it is difficult to write about lichen because grammar can't account for its being. "As a symbiotic organism, half fungus and half alga, it/they are/is neither singular nor plural, and neither wholly plant (algae are plants) nor fungus (fungi make up their own kingdom)."[117] Because of their resistance to taxonomy, she argues, lichen "rattle the foundations of Western ontology." Palmer

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[115] Epstein, "Algae and Fungi Meet Film."
[116] Anne Pringle, "Establishing New Worlds: The Lichens of Petersham," *Arts of Living on a Damaged Planet*, eds. Anna Tsing et al. (Minneapolis: University of Minnesota Press, 2017), G157.
[117] Laurie Palmer, "The Lichen Museum," *Why Look at Plants? The Botanical Emergence in Contemporary Art*, ed. Giovanni Aloi (Leiden, Netherlands: Brill Rodopi, 2019), 147.

writes that with his creation of the binomial system of classification, which we use today, the eighteenth-century Swedish botanist Carl Linnaeus "carved life up into discrete objects of observation that were frozen in space (denied their movements) and isolated from the complex ecologies of which they were a part."[118] Put another way, Linnaean taxonomy offers a model of life science that is objective, static, and alienating. But lichens throw this all in disarray. Though their binomial names place them in the fungi kingdom, this is because the system requires one and only one kingdom—it is a vertical hierarchy, and it doesn't account for horizontal relationality. The system favors the fungus, and it has to prioritize one part over the other one to ten thousand parts. As Palmer details, this has led to some 160 years of debate since Swiss botanist Simon Schwendener first described the algae/fungus relationship, beginning with a rejection of this hypothesis by other scientists and persisting today in the form of debates about which parts are in control and which benefit the most.[119] In these debates, we see that preserving the taxonomic system and its logic is paramount, and entities that resist this logic are nonetheless shoehorned into the system.

[118] A. Laurie Palmer, *The Lichen Museum* (Minneapolis: University of Minnesota Press, 2023), 29.
[119] Palmer, *The Lichen Museum*, 28–36.



FIGURE 1.7. Still from *Lichen,* 2019, directed by Lisa Jackson. Courtesy of the filmmaker and Moving Images Distribution.

Lichens pose a significant challenge to any way of seeing that prioritizes individuation and clear boundaries, possibly accounting for the dearth of documentary films (blue chip or other) on this fascinating subject. In a scene from an episode of *Galapagos 3D* (2013), Attenborough describes how scalesia trees survive in the unique ecosystems of the Galapagos highlands. A major part of the answer is the trees' relationships with lichens, but the lichen receive less than one minute's time on screen—and this is a rare mention of lichen at all in the hundreds of hours of Attenborough documentaries. Moreover, the particular lichen (or lichens) in question is never even identified by a common or binomial name. Though nominally the scene

is about symbiosis, lichens are treated like a generic resource. Humanist visuality doesn't seem to know what to do with lichen.

This propensity to befuddle is part of what drew Jackson to create a film about lichens, mentioning in an interview that reading "about how lichens defy scientific definition" captivated her—a film she says she could have titled *Paradox*.[120] It is difficult to look at Jackson's imagery of these "tiny planets" and not question the meaning of such a fundamental word as *organism*. Though advanced visual technologies can be used to create a divide between subjects and objects, in *Lichen* they serve as agents of relationality. **"**There's something really inspiring," Jackson explains, "about looking closely at an organism that works symbiotically in community and adapts to its surroundings."[121] The close looking here isn't about cataloging organisms or sequencing DNA; its end is the appreciation of certain kinds of relationships. And this appreciation is rooted in Indigenous epistemologies that do not align with or originate from Western humanist epistemology.[122] Jackson describes Indigenous science as seeing "all the parts [of our environment] integrated in relationship."[123] Similarly, Margaret Kovach, a Nêhiyaw and Saulteaux education scholar, argues that the notation of self-in-relation is "inherent to Indigenous

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[120] Epstein, "Algae and Fungi Meet Film."
[121] Gies, "What Lichens Can Teach Us."
[122] In her book on Indigenous methodologies, Margaret Kovach acknowledges that Western thought is not monolithic or static. Explaining her use of the term *Western*, however, she writes that "the purpose is not to propagate unhelpful binaries, but to point out that Indigenous approaches to seeking knowledge are not of a Western worldview." Margaret Kovach, *Indigenous Methodologies: Characteristics, Conversations, and Contexts* (Toronto: University of Toronto Press, 2009), 21.
[123] Gies, "What Lichens Can Teach Us."

knowledges."[124] Jackson and Kovach both point to traits that make Indigenous knowledge especially suited for exploring lichen.

But in accordance with these qualities of Indigenous science and knowledge, even though lichens are the only explicit subject of the film, it is actually about so much more. In interviews about *Lichen*, Jackson often references people and how we relate to the natural world. For example, she mentions in one interview that "what I hope is that the film offers a hopeful, inspiring, perspective [on] how we can relate to the natural world that could have an impact on the way we take care of the environment–more on a philosophical level."[125] The film is then, in part at least, a meditation on how humans relate to the non-human world. How do we account for this subject given its seeming absence?

Writing about digressions in Anishinaabe rhetoric, and the challenges his non-Indigenous college students have with it in the classroom, Anishinaabe scholar Lawrence W. Gross offers us an important perspective. Gross identified four factors that result in the use of digressions: 1) speakers try to be guided by spirits or spiritual values; 2) speakers prefer to address what they know directly; 3) speakers will talk about what they think an audience needs to hear; and 4) speakers try to speak from the heart.[126] If *Lichen* is about human relationships with the non-human without reference to humans, we might think of it as a form of digression. We can also

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[124] Kovach, *Indigenous Methodologies*, 21.
[125] Epstein, "Algae and Fungi Meet Film."
[126] Lawrence W. Gross, *Anishinaabe Ways of Knowing and Being* (Farnham, Surrey, UK: Ashgate Publishing, 2014), 170.

identify similar factors to those listed above in the film. Though Goward is not Indigenous, Jackson has said that there is "so much resonance between" between their worldviews,[127] and so while Goward is not necessarily guided by Anishinaabe values, Jackson's incorporation of his narration is. Likewise, Jackson incorporates Goward's experiential knowledge of lichens, as well as hers from the filmmaking process, to present an intimate portrait of the organisms. Reflecting Gross' third point, Jackson explains that "with lichens I saw something that I felt communicated something magical about the living world that could speak to a wide audience, that would be really accessible for people who aren't necessarily into science or small organisms."[128] And finally, the passion both Jackson and Goward express for lichens makes clear they meet Gross' fourth point.

Experiential knowledge is at the heart of Indigenous epistemologies, and the digression is a result of such knowledge.[129] But it also represents an experience on the

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[127] Epstein, "Algae and Fungi Meet Film."
[128] Epstein, "Algae and Fungi Meet Film."
[129] While it is important to not erase the differences between Indigenous cultures, and Indigenous writers often take pains to locate their philosophies within their own communities, many also identify these philosophies as part of a broader Indigenous or Native American worldview. Blackfoot scholar Leroy Little Bear writes that "there is enough similarity among North American Indian philosophies to apply concepts generally, even though there may be individual differences or differing emphases." Referencing Little Bear, Kovach comments that "as Indigenous people, we understand each other because we share a worldview that holds common, enduring beliefs about the world." Similarly, in his discussion on Anishinaabe rhetoric, Gross writes, "From my experience listening to speakers from different Native nations, I suspect many features of Anishinaabe rhetoric apply to other Native American cultures," offering the broader concept of "Native American rhetoric." Leroy Little Bear, "Jagged Worldviews Colliding," *Reclaiming Indigenous Voice and Vision*, ed. Marie Battiste (Vancouver: University of British Columbia Press, 2000), 77; Kovach, *Indigenous Methodologies*, 37; Gross, *Anishinaabe Ways of Knowing and Being*, 169.

part of the audience, as opposed to the transmission of abstract knowledge. Gross laments the knowledge his non-Indigenous students miss when they tune out the digressions of elders that they feel are off topic. In listening to digressions, Gross advises that "the connection between what the speaker is saying and the question at hand might not be immediately evident. Instead, the words of the speaker are more like seeds planted in one's consciousness."[130] In this way, a story about how algae and fungi relate and live together is an answer of sorts to questions about how humans can live together with non-humans in ethical and just ways. Far from being anthropocentric, this approach is an acknowledgment of the human condition's inescapable entanglement with plant and fungal worlds. *Lichen* exhibits both the non-appropriation and the relationality that I identify as central to botanical-multispecies visuality.

It is instructive that, as Cree and Métis scholar Wendy Makoons Geniusz notes, there are no words for "plant" or "botanical knowledge" in Anishinaabemowin, the Anishinaabe language.[131] Though there are words for specific plants or plant categories (which may not completely align with English words), these concepts are intimately linked to larger webs of meaning, the making of certain objects, preparations of foods, and spiritual understandings. Chapters 2 and 3 will explore in greater detail the importance of language in Anishinaabe and Indigenous thought,

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[130] Gross, *Anishinaabe Ways of Knowing and Being*, 182.
[131] Wendy Makoons Geniusz, *Our Knowledge Is Not Primitive: Decolonizing Botanical Anishinaabe Teachings* (Syracuse: Syracuse University Press, 2009), 52–53.

storytelling, and art. But for our purposes now, we can draw from this an understanding of how within Anishinaabe knowledge there is no clear separation between a plant (or a lichen) and the human world—these aren't separate domains. As a consequence of their "conversation[s] with place," Goward notes that "because every place is different, the conversation has to be different" with different lichen. This encapsulates the open/closed nature of both plants and botanical-multispecies visuality. That is, lichens are bound up with their surroundings, but it is impossible to fully know lichen as a life form because there are uncountable manifestations in every place. *Lichen* is elucidating and thought-provoking, but it makes no attempts at mastery. It is aesthetically tantalizing but resists rendering lichens as mere objects of visual consumption.

Conclusion

In her book *The Lichen Museum*, Palmer writes that "focusing on the multiple threads of connection that constitute *and locate* any being is not to erase the *individuality* of the "I" or the specificity of the organism but to thicken and enrich it, and to situate "it" within a bouquet of events and relations occurring in time through networks of support, extension, and amplification."[132] As we can see with lichens, challenges to humanist individuation and taxonomy deny neither the existence of individuals nor of difference. Individual lichens exist, for example, but the concept of the individual is complicated and expanded. This is true more broadly with botanical-

[132] Palmer, *The Lichen Museum*, 67.

multispecies visuality, as we see in both *Lichen* and *Which Plants*. These films are premised on a celebration of difference—different ways of knowing and different ways are relating to plants. Both films look and feel very different, and they are borne out of different traditions and experiences. What they both share is how the filmmakers have been touched by plants (and fungi), physically and psychologically. The botanical in these films are collaborators and thus the films are shaped by multispecies encounters, resulting in formal and narrative choices that differ greatly from humanist blue-chip nature documentaries.

My identification of a botanical-multispecies visuality in these films is not meant to suggest a specific aesthetic or philosophical regime that the filmmakers intentionally set out to enact. There is no botanical-multispecies visuality manifesto, and it is not a movement or an "-ism." The characteristics I have described emerged from analysis of a broad plant *umwelten*, an exploration of counter-humanist thought, and close readings of these particular films. Though botanical-multispecies visuality can manifest in different forms, and others might articulate its traits in different ways, there is nonetheless a clear model for a counter-humanist visuality indebted to the world of plants. While this chapter has focused primarily on a set of formal traits exhibited by botanical-multispecies visuality, the following chapter will home in on the role of the artist, considering the act of creation as a kind of "day-to-day engagement with plants," as described by van der Veen. If humanist visuality is premised on disembodied and distance, it is imperative that we turn to the artist's own embodiment.

Chapter 2:

Animating Relationality: Bodies, Plants, and Resistance

This chapter explores the aesthetic, political, and philosophical implications of the entanglement of animation with animism, focusing on how contemporary artists Amanda Strong and Miwa Matreyek use the medium as a site of multispecies storytelling and botanical agency. Strong's *Biidaaban (The Dawn Comes)* (2018) exemplifies how stop-motion animation can serve as a form of cultural continuance and sovereignty, centering a non-binary protagonist and a multispecies coalition in a ritual act of maple syrup harvesting. Drawing on Indigenous aesthetics, anti-colonial theory, and the genre of Indigenous slipstream, Strong's work rejects the linear temporality and static representational models embedded in colonial realism. Matreyek's animated performance *Infinitely Yours* (2020) similarly positions the artist's body in visual dialogue with animated environments, using projection to craft layered narratives that visualize ecological grief and precarity while reimagining human-plant relationality. While the previous chapter explored the embodied spectatorship of a botanical-multispecies visuality, this chapter considers embodied artistic practices as avenues for world-making and multispecies collaboration.

From the anarchic play of early Disney shorts to the politically grounded stop-motion of Amanda Strong and the ecologically mournful performances of Miwa Matreyek, the works discussed here offer distinct but related visions of how animation can make otherwise unseen relational worlds visible. These works ask: What does it mean to live with plants, to listen to them, to make meaning and culture

alongside them? How can animation—as a medium of movement, repetition, and metamorphosis—help us reimagine time, community, and resistance in ways that exceed capitalist and colonial ontologies?

By situating these contemporary works in relation to the formal and thematic affordances of early animation, this chapter argues that botanical life in animation is more than metaphor or backdrop—it is an active collaborator in world-making practices. Whether through the dancing trees of *Flowers and Trees* (1932), the spectral forest beings of *Biidaaban*, or the blooming planetary cores of *Infinitely Yours*, these works animate a vision of cultural practice and resistance that is fundamentally multispecies. In doing so, they challenge both the visual conventions of animation and the sociopolitical regimes that attempt to delimit who and what can be seen, heard, and felt.

The Lyrical Revolt of Animation

In August 1929, almost a year after Walt Disney Studio released its first Mickey Mouse animated short film (*Steamboat Willie*), the studio released the first installment of its *Silly Symphony* series of shorts. Between this first short, *The Skeleton Dance*, and the final installment in 1939, the studio released 75 films in the series. The series is known for its innovative use of Technicolor, and it earned the studio seven Academy Awards for Best Animated Short Film, which is to say every single award in the category from its debut at the annual ceremony in 1932 until the series' end in 1939. *Silly Symphony* would go on to be influential both within the

studio and within the greater world of animation, but it is the first installment that is among the most fascinating entries in the series, not for its long-lasting influence but because it represents an approach to animation that would wane in the early years of Disney productions—if not holding greater influence outside the dominant studio.

I begin with *The Skeleton Dance* not only because it stands at the dawn of industrialized animation but because it exemplifies how early animation could briefly destabilize the representational norms that would soon turn into convention. In its brief runtime, the film conjures a universe where physical laws collapse, plant life teeters on the edge of animacy, and the borders between human, animal, and object become blurred. The unruly branches, twitching trees, and skeletal choreography establish a visual logic that is neither strictly anthropomorphic nor naturalistic. This animated graveyard becomes a rehearsal space for modes of seeing and feeling that exceed the constraints of modern rationalism.

The black-and-white film opens with flashes of lightning that give way to an extreme close-up of the blinking eyes of an owl. As the camera zooms out, the owl is shown to be standing on a tree branch on a windy night. Slender branches resembling those of a pussy willow dance in the wind (fig. 2.1), and another branch that ends with a skeletal hand harasses the owl. The setting is the graveyard of a small parish church. The bell in the belfry rings as the clock strikes midnight, but the gabled roof seems to slightly sink, as if the church is abandoned. A split-rail fence encloses the churchyard, and some of the tombstones are in a state of decline. This all gives the scene an atmosphere of "Old America," like the setting of a Washington Irving novel.



FIGURE 2.1. Still from *The Skeleton Dance*, directed by Walt Disney, 1929.

Following a series of visual gags, the main action begins as a skeleton emerges from a grave and creeps and dances around the graveyard, with sound synchronized to the skeleton's movements. Three other skeletons eventually emerge and perform their eponymous dance. In addition to their reanimation from the dead, the skeletons defy physical laws by stretching their limbs to great lengths (fig. 2.2), shrinking them to virtual non-existence, and losing body parts that then gain their own agency. Perhaps the film's most famous scene is when one skeleton removes the femurs of another and plays the latter's spine and ribcage like a xylophone to the tune of Edvard Grieg's "March of the Dwarfs" (1893). Upon hearing the crow of a rooster signaling the imminent sunrise, the skeletons dance the Charleston (which was

contemporary to the film's time) and return to their (shared) grave. Throughout the establishing shot, the initial visual gags, and the introduction of the first skeleton, the branches of the large tree in the graveyard pulsate and move in a manner that is neither naturalistic nor anthropomorphic (save for the brief appearance of a hand). The tree's movements—an exaggerated animism—set the supernatural tone of the film before giving way to its primary characters.

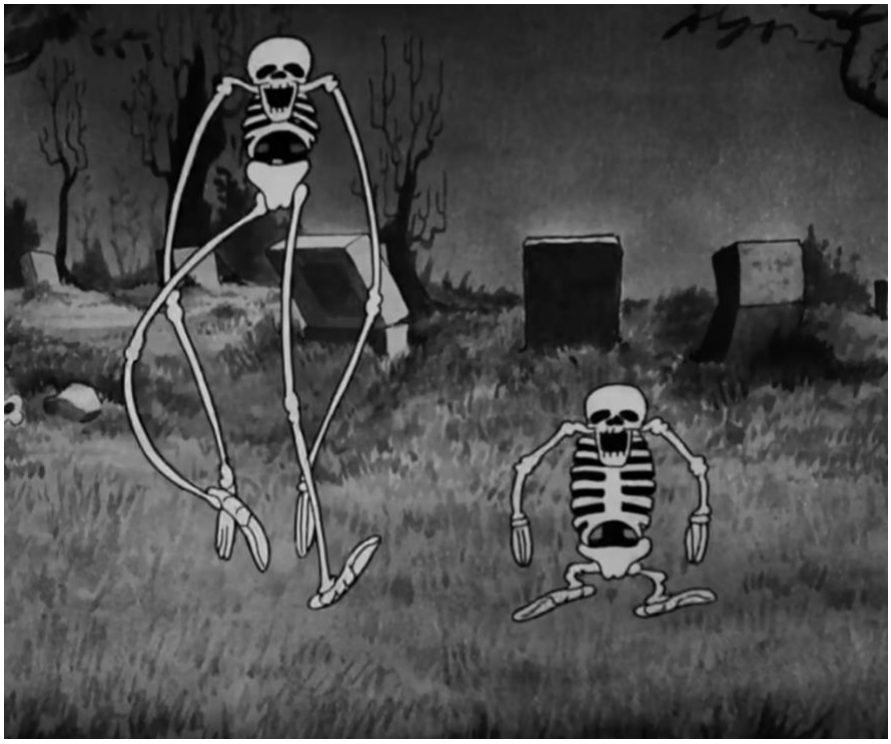

FIGURE 2.2. Still from *The Skeleton Dance*, directed by Walt Disney, 1929.

Film historians Russell Merritt and J.B. Kaufman write that the film "startled first night critics" and that "nothing that survives in late 1920s American animation or in the earliest Mickey Mouse cartoons prepares for the manic energy, rich

atmospherics or invented syncopated movement" of *The Skeleton Dance*.[1] The film was so novel and shocking, it seems, that, according to a 1931 *New York Times* report, the Danish film censor banned *The Skeleton Dance* for being "too macabre."[2] Though the re-animated skeletons and graveyard scene were likely the primary causes of concern, an unnamed *Times* writer mocked the decision, commenting that "there are on record no reports of weird nightmares in which branches of trees clutch one."[3] This comment speaks to a, perhaps latent, discomfort with the animism of the non-animal.

Anthropologist Tim Ingold gives the typical definition of *animism* as "the imputation of life to inert objects." He argues, however, that for the Indigenous people to whom this term is typically applied, animism doesn't represent a single belief but "a way of being that is alive and open to a world in continuous birth."[4] Similarly, anthropologist Eduardo Kohn, writing about the Runa people of Ecuador's Upper Amazon, argues that animism "is a way of attending to living thoughts in the world that amplifies and reveals important properties of lives and thoughts. It is a form of thinking about the world that grows out of a specially situated intimate

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[1] Russell Merritt and J.B. Kaufman, *Walt Disney's Silly Symphonies: A Companion to the Classic Cartoon Series* (Gemona, Italy: La Cineteca del Friuli, 2006), 6.
[2] "Against and For Cartoon Films," *New York Times*, March 4, 1931, https://timesmachine.nytimes.com/timesmachine/1931/03/04/102217341.html?pageNumber=26/.
[3] "Danes Ban 'Mickey Mouse': Censor Calls the Film Creation of Disney Too Macabre," *New York Times*, February 24, 1931, https://timesmachine.nytimes.com/timesmachine/1931/02/24/106217157.html?pageNumber=11/.
[4] Tim Ingold, "Rethinking the Animate, Re-Animating Thought," *Ethnos* 71, no. 1 (2011): 9, https://doi.org/10.1080/00141840600603111.

engagement with thoughts-in-the-world in ways that make some of their distinctive attributes visible."[5] My engagement with animism in this chapter is concerned with this sense of an open world in which boundaries are permeable and fuzzy. I also draw insights from *Animism* (2010–14), a multi-part exhibition and publication series by the curator Anselm Franke.[6] The exhibition project does not present art or material culture from those cultures typically considered animists by anthropologists. Subjects of the series range from Soviet animation, 19th-century physiological motion studies, *ḥāl* (a Sufi trance state), Max Ernst's collage novel *La Femme 100 Têtes* (1929), and more. Franke explains that the exhibition uses the term *animism* and "its baggage as an optical device, a mirror in which the particular way modernity conceptualizes, implements, and transgresses boundaries can come into view."[7] In this chapter, I extend this focus to the subject of contemporary animation and the boundaries between the human and the botanical. Whereas *Animism* is concerned with interrogating modernity, I interrogate the humanist worldview that undergirds modernity.

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[5] Eduardo Kohn, *How Forests Think: Toward an Anthropology Beyond the Human* (Berkeley: University of California Press, 2013), 73.

[6] Iterations of the exhibition were presented at Museum of Contemporary Art Antwerp and Extra City, Antwerp (2010); Kunsthalle Bern (2010); Generali Foundation, Vienna (2011); Haus der Kulturen der Welt, Berlin (2012); e-flux, New York (2012); OCT Contemporary Art Terminal, Shenzhen (2013); Ilmin Museum of Art, Seoul (2013); and Ashkal Alwan, Beirut (2014).

[7] Anselm Franke, "Much Trouble in the Transportation of Souls, or The Sudden Disorganization of Boundaries," *Animism*, ed. Anselm Franke (London: Sternberg Press, 2010), 11.

Animation scholar Paul Wells writes that animation "serves to question and challenge the received knowledges which govern the physical laws and normative socio cultural orthodoxies of the 'real world.'"[8] Wells further cites Roger Cardinal, a historian of surrealism and outside art, who argued that "the whole idea of the animated film is to suppress the categories of normal perception" and to "annihilate the very conditions of rationality."[9] We see this throughout *The Skeleton Dance* with the tree's movements, the reanimation of the dead, cats that shed their coats in fear, and more. It is perhaps this irrationality, more so than the macabre, that challenged the Danish film censor. Death and the occult were present in Danish cinema of the time. *The Vicar of Vejlby* (1922 and 1931) and *Hotel Paradis* (1931) are feature-length films about murders. At this time, two titans of Danish cinema were Benjamin Christensen and Carl Theodor Dreyer. Christensen is famous for his *Häxan*, his 1922 documentary/horror film about witchcraft, and Dreyer directed *Vampyr* (1932), a horror film about vampirism. So, what was so unsettling about *The Skeleton Dance*?

Film programmer Edwin Carels writes that *The Skeleton Dance* demonstrates "animation's potential to suggest actions beyond the obvious parameters of physiology." Referring to a scene in which the first skeleton opens its jaws wide as it approaches the camera, Carels continues, "Swallowed by the skeleton's mouth, the viewer is warped into a universe where nature's laws are no longer univocally

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[8] Paul Wells, *Animation and America* (New Brunswick, NJ: Rutgers University Press, 2002), 5.
[9] Roger Cardinal, "Thinking Through Things: The Presence of Objects in the Early Films of Jan Svankmajer," *Dark Alchemy: The Films of Jan Svankmajer*, ed. Peter Hames (Towbridge, UK: Flicks Books, 1995), 89.

fixed."[10] There is, then, a kind of radicality latent in animation that challenges much more than just the political order of the day but also the physical order. *The Skeleton Dance* was produced and premiered during the inter-war period of politically engaged avant-garde art, filmmaking, and literature. Luis Buñel's film *Un Chien Andalou* premiered the same year as *The Skeleton Dance*; Andre Breton published the first Surrealist manifesto in 1924 and the second in 1929; the revolutionary Mexican muralist movement was reaching its peak; and Salvador Dalí's *The Persistence of Memory*, the painting of "melting clock" fame, was completed in 1931. This is the political and artistic backdrop to which *The Skeleton Dance* was released. Importantly, this speaks to the political potential of animation, especially given its ability to express the mutability of rules, conventions, and physics itself.

This potential radicality of animation was famously noted by the Soviet director and film theorist Sergei Eisenstein, who wrote extensively on the films of Walt Disney, including *Silly Symphony*, in unfinished and only posthumously published writing. Eisenstein was more than appreciative of Disney's craft and storytelling. In his 1941 notes, he wrote that he was "sometimes frightened" by Disney's films "because of some absolute perfection in what he does." Comparing Disney's films to the sermons of St. Francis of Assisi and the work of early Renaissance painter Fra Angelico, Eisenstein continues: "This man seems to know not only the magic of every technical means, but also all the most secret stands of

[10] Edwin Carels, "Biometry and Antibodies Modernizing Animation /Animating Modernity," *Animism*, ed. Anselm Franke (London: Sternberg Press, 2010) 61–62.

human thought, images, ideas, feelings."[11] Eisenstein connects Disney's films industrialization, offering something primal in response to the face of alienating modernity. He argues that these films "had to arise at the very summit of a society that had completely enslaved nature."[12] In an oft-cited passage, Eisenstein writes:

> "Disney is a marvellous lullaby for the suffering and unfortunate, the oppressed and deprived. For those who are shackled by hours of work and regulated moments of rest, by a mathematical precision of time, whose lives are graphed by cent and dollar. Whose lives are divided up into little squares, like a chess board, with the sole difference that whether you're a king or a rook, a queen or a bishop—on this board you can only lose. And also because its black squares do not alternate with white ones, but are all of a protective grey colour, day after day."[13]

The turgid language continues, with Eisenstein concluding that the conditions of early-twentieth-century modernity in the US are why "Disney's films are a revolt against partitioning and legislating, against spiritual stagnation and greyness." But Eisenstein does not offer Disney up as a model of revolutionary filmmaking. "The revolt is lyrical," he proclaims. "The revolt is a daydream. Fruitless and lacking consequences. These are not those daydreams which, accumulating, give birth to action and raise a hand to realize the dream. They are golden dreams to escape to."[14] If there is so much potential in the medium of animation, and if this is evident in the earliest Disney films, why are these films so inconsequential? Writing before the publication of Eisenstein's Disney notes, historian Robert Skylar argues that the

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[11] Sergei Eisenstein, *Sergei Eisenstein on Disney*, ed. Jay Leyda (London: Seagull Books, 2017), 5.
[12] Eisenstein, *Sergei Eisenstein on Disney*, 7.
[13] Eisenstein, *Sergei Eisenstein on Disney*, 8.
[14] Eisenstein, *Sergei Eisenstein on Disney*, 8–9.

earliest Mickey Mouse and *Silly Symphony* films were "freed from the burdens of time and responsibility, events are open-ended, reversible, episodic, without obvious point. Outlandish events occur without consequence. There is no fixed order of things: the world is plastic to imagination and will."[15] Skylar notices a change in Disney cartoons that began in 1932 and was complete by 1933 after which "a whole new world view emerged."[16] Films after this point "rejoin the straight and narrow path of time." In these films, there are clear beginnings and endings, there are clear consequences, and the world is depicted as a place of rules that must be obeyed.

In addition to its visual lawlessness, *The Skeleton Dance* was also a technological innovation; for example, composer Carl Stalling developed a system to perfect the synchronization of sound and image, which had theretofore been an obstacle faced by animation productions.[17] Disney and his studio would be responsible for other technological achievements, and there is perhaps a relationship between this drive for control and technical mastery and the narrative and forms that

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[15] Robert Skylar, "The Making of Cultural Myths—Walt Disney," *The American Animated Cartoon: A Critical Anthology*, eds. Danny Peary and Gerald Peary (New York: E.P. Dutton, 1980), 61.

[16] Skylar, "The Making of Cultural Myths," 61.

[17] Stalling described the so-called "tick system" in a 1971 interview: "Perfect synchronization of music for cartoons was a problem, since there were so many quick changes and actions that the music had to match. The thought struck me that if each member of the orchestra had a steady beat in his ear, from a telephone receiver, this would solve the problem. I had exposure sheets for the films, with the picture broken down frame by frame, sort of like a script, and twelve of the film frames went through the projector in a half second. That gave us a beat." Carl Stalling, interview by Michael Barrier, Milton Gray, and Bill Spicer, *Funnyworld* 13 (1971), https://web.archive.org/web/20241219035904/http://www.michaelbarrier.com/Funnyworld/Stalling/Stalling.htm/

would dominate Disney films. Carles writes that "the Disney studio would continue to innovate and expand technological control, but soon all anarchy was evacuated from their universe."[18] Wells argues that "the ideological imperative in Disney's *Silly Symphonies* and early features may be understood as populist utopianism, accentuating the positive, the aspirational and the rural, in the face of an advancing world."[19] That is to say, while Disney's films represent discontent with industrial modernism, they look romantically back toward an idealized past. "Ironically," Wells continues, "this folk sensibility ran in parallel to Disney's own on-going development of an industrial base for the production of cartoons." Eisenstein declares that "the triumphant proletariat of a future America will erect no monuments to Disney as a fighter either in their hearts, or on their street squares."[20] Eisenstein was no double correct on this matter, but one wonders if he could have imagined the international string of monuments Disney's company would erect to him and his creations.

Two months after the release of *The Skeleton Dance*, the studio released its third *Silly Symphony* entry, *Springtime*. The film opens on a verdant landscape with two dancing trees bending left and right while waving their two branches. The trees stand in a meadow dotted with white flowers that likewise dance to Grieg's "Morning Mood." There are nods to anthropomorphization—the trees' two branches vaguely resemble arms and hands and their crowns heads—but the trees and flowers lack overt symbols of faunal transmogrification, like eyes, mouths, or voices. As the film

[18] Skylar, "The Making of Cultural Myths," 62.
[19] Wells, *Animation and America*, 23.
[20] Eisenstein, *Sergei Eisenstein on Disney*, 17.

progresses, faunal anthropomorphization takes hold. We now see flowers with big eyes and mouths, and a tree is shown with identifiable fingers, toes, and facial features. If the transformation from anarchy to order took place from 1928 to 1932, we see an early microcosmic foreshadowing of this transformation in *Springtime*.

This transformation is more fully realized in 1932's *Flowers and Trees*, a *Silly Symphony* short that marked several key milestones in Disney's development. It was the first publicly released film to use the three-strip Technicolor process, and it won the first Academy Award for Best Animated Short Film.[21] The film depicts a forest that has "come alive," yet its liveliness is unmistakably human in shape and sensibility. Trees possess expressive faces, perform courtship rituals, and even fight duels (fig. 2.3)—reenacting familiar tropes from melodrama and romantic comedy.[22] The messy, animist potential glimpsed in earlier shorts like *The Skeleton Dance* is here rendered orderly and legible. Disney's technical innovations, coupled with

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[21] "Brief Descriptions and Expanded Essays of National Film Registry Titles," Library of Congress, accessed May 21, 2025, https://www.loc.gov/programs/national-film-preservation-board/film-registry/descriptions-and-essays/.

[22] Though human-animal zoomorphs are perhaps more common in art, phytomorphs are nonetheless persistent through art history. Yam-human phytomorphs are found in Australian rock art, and for these researchers, "Anthropomorphing of plant motifs suggests close symbolic identification with plants from at least the early-to mid-Holocene." Peter Veth et al., "Plants Before Farming: The Deep History of Plant-use and Representation in the Rock Art of Australia's Kimberley Region," *Quaternary International* 489: 38, https://doi.org/10.1016/j.quaint.2016.08.036/. Illustrations in medieval European herbals (books on the uses of plants) and medical texts give us insights into the relationship between people and plants from this period. An Old English herbal (c. 1000–1025 CE) features several fascinating illustrations, including one of a mandrake with the body, legs, and arms of a human, a leafy head, and branching roots for fingers and toes. Old English illustrated herbal, Cotton MS Vitellius C III fol. 57v, British Library, London. In this chapter, we will see Miwa Matreyek meld human and plant forms in what we could call a kind of phytomorph.

increasing institutional recognition, coincide with a tightening of the representational frame. Max Horkheimer and Theodor W. Adorno wrote in the 1940s that "animism had endowed things with souls; industrialism makes souls into things."[23] Later Disney cartoons certainly represent a kind of industrial or Fordist visuality, and the focus on order and legibility lends itself to a kind of settler colonial visuality.



FIGURE 2.3. Still from *Flowers and Trees*, directed by Burt Gillett, 1932.

[23] Horkheimer and Adorno write about cartoons, and Disney in particular, mirror the arguments above. "Cartoon and stunt films were once exponents of fantasy against rationalism. They allowed justice to be done to the animals and things electrified by their technology, by granting the mutilated beings a second life. Today they merely confirm the victory of technological reason over truth… To the extent that cartoons do more than accustom the senses to the new tempo, they hammer into every brain the old lesson that continuous attrition, the breaking of all individual resistance, is the condition of life in this society. Donald Duck in the cartoons and the unfortunate victim in real life receive their beatings so that the spectators can accustom themselves to theirs." Max Horkheimer and Theodor W. Adorno, *The Dialectic of Enlightenment: Philosophical Fragments* (Stanford: Stanford University Press, 2002), 21, 110.

This is not to suggest that anthropomorphization itself is inherently reductive or incompatible with multispecies thinking. Indeed, anthropomorphism can sometimes function as a critical strategy for kin-making or empathy across species lines. But in Disney's early films, it increasingly signals a narrowing of visual and narrative possibilities—a displacement of botanical agency in favor of human legibility. What begins as a speculative space where branches twitch and sway in unsettling ways becomes a stage for characters whose motivations and affect are comfortingly familiar. In this shift, we can trace the early domestication of animation's radical potential—its retreat from visual unruliness, narrative ambiguity, and the possibility of nonhuman worldviews. The plants may still move, but they do so in ways calibrated for human pleasure and coherence.

In tracing the arc from *The Skeleton Dance* to *Flowers and Trees*, we can observe an early transformation in animation's treatment of the botanical and the supernatural. What begins as a space of radical visual possibility—where trees sway with uncanny agency and death is rhythmic and playful—quickly becomes a domesticated landscape of sentimental anthropomorphism. As Disney's technical mastery increased, so too did its narrative and visual containment. The unruly, animist potential of early shorts was replaced by a more ordered, human-centered worldview, one that often used plants as decorative extensions of feeling or mood rather than agents in their own right. The transition from twitching, unnerving tree branches to singing, doe-eyed flowers marks not just a stylistic evolution but an ideological one: from disruption to coherence, from possibility to prescription.

Yet the latent radicality Eisenstein sensed in early animation—its revolt against partitioning and fixed time—has not disappeared. Instead, it reemerges in other hands and under different conditions. Contemporary animation artists like Amanda Strong reclaim this disruptive capacity, not as escapist fantasy but as a means of visualizing sovereign practices, intergenerational knowledge, and multispecies solidarity. In what follows, I turn to Strong's *Biidaaban (The Dawn Comes)*, a short stop-motion film that centers not only plant life as relational and agentic, but also animation itself as a form of cultural continuance, resistance, and world-making. Where Disney's early shorts play with the fluidity of time and form, Strong's work insists on their ethical stakes.

Stories of Sap[24]

If early animation like *The Skeleton Dance* gestured toward the instability of form, logic, and the human figure, there are contemporary animated works that take this potential further—reclaiming it not as dreamlike escape, but as a grounded, relational, and political practice. *Biidaaban (The Dawn Comes)* (2018), a short film by Michif artist Amanda Strong, enacts a different kind of animated world, one in which plants are not symbolic accessories or visual flourishes, but active

[24] A version of this chapter's argument regarding Amanda Strong's *Biidaaban* was first published as Matthew Harrison Tedford, "Is a Non-Capitalist World Imaginable? Embodied Practices and Slipstream Potentials in Amanda Strong's *Biidaaban*," *Feminist Media Histories* 8, no. 1 (2022), 46–71, https://doi.org/10.1525/fmh.2022.8.1.46. The material has been substantially revised and expanded. Strong was not available for an interview for this dissertation, but several recorded and published interviews with the artist have been consulted.

collaborators in practices of resistance, ritual, and cultural continuance. Where Disney's forest becomes increasingly anthropomorphized and narratively disciplined, Strong's sugar maples resist legibility on settler colonial terms; they instead form part of an intergenerational, multispecies coalition rooted in Indigenous sovereignty and futurity. This section turns to *Biidaaban* to explore how animation, in Strong's hands, becomes not only a visual medium but an embodied and ethical process—one that refutes a capitalist realism and linear time through aesthetic, material, and cosmological means.

Biidaaban is the story of a young Indigenous person named Biidaaban and an ancient being named Sabe who plot to collect sap from sugar maple trees in order to make syrup. The duo faces off against an urban environment that is constitutionally hostile to their plan, but they ultimately receive assistance from other beings to accomplish this ancient practice. Although the film seemingly represents a singular activity—urban syrup making—that activity and the struggle it entails enact a process of world building that defies the repressive logic of the settler colonial state. The film opens with a blue orb of light traveling through the ground, bypassing root systems, and emerging sometime before dawn in an Ontario, Canada, suburb. The orb travels with seeming determination along the telephone lines running parallel to rows of cookie cutter two-story homes. Michi Saagiig Nishnaabeg writer Leanne Betasamosake Simpson provides a solemn narration to this pre-credit scene, reading from her poem "caribou ghosts and untold stories." The camera then takes viewers from the canopy of a sugar maple tree down to its base, revealing red safety fencing

surrounding the trunk. The luminous apparition of a caribou, Ghost Caribou, nuzzles the ground in front of the tree, causing the fence to dematerialize, and then runs off.

The dispossession of Indigenous land that undergirds *Biidaaban* is not abstract or allegorical—it is intimate, embodied, and ongoing. Yet Strong's work resists the fatalism that often accompanies settler-colonial narratives of inevitability and loss. Situated within Indigenous futurism, *Biidaaban* offers not just an imagined alternative, but an enacted one. Through the interweaving of syrup harvesting, ancestral voices, and the painstaking labor of stop-motion animation, Strong activates a visual practice rooted in what political theorist Glen Sean Coulthard (Yellowknives Dene) terms "grounded normativity"—an ethical framework that emerges from place-based, collective practices. Simpson's work similarly foregrounds the transformative potential of everyday acts of resurgence, where land-based practices like syrup making are not metaphors but mechanisms for enacting Indigenous sovereignty and relationality. In *Biidaaban*, these acts—whether harvesting sap or animating a single gesture frame by frame—are not merely symbolic. They are forms of world-making. What emerges is not a speculative escape from colonialism, but a return to kinship, land, and Indigenous time that has always already been ongoing.

The film is loosely based on three poems and short stories by Simpson, who, like Strong, is from Ontario. Strong and Simpson have worked together for several years, first when Strong illustrated Simpson's 2013 short story anthology *The Gift is in the Making: Anishinaabeg Stories*. The two collaborated next on Strong's 2016 short stop-motion film *How to Steal a Canoe*, which was created to accompany a

spoken-word poem of Simpson's of the same name featuring Cree cellist Cris Derksen.[25] That film tells the story of a young Nishnaabeg woman and an elder Nishnaabeg man who rescue a canoe from "canoe jail"—a museum—to return it to a lake. This film was created in two weeks with a budget of only $1,000—Strong didn't have a studio at the time and recalls production team members using her bed to stretch birch bark—and the experience encouraged Strong and Simpson to see what they could create with more substantial financing.[26] What would become *Biidaaban* began to emerge when Strong read Simpson's poem "caribou ghosts and untold stories," which now provides the opening and closing narration of the film. As Strong told audiences during a 2019 conversation with Simpson at the Remai Modern, in Saskatoon, Saskatchewan, she was struck by the character of Ghost Caribou and could begin to see the puppet she would create for it, eventually building a larger story from the connections she saw across several of Simpson's poems and stories, including "Plight" and "The Gift is in the Making."[27]

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[25] "How to Steal a Canoe" was first published in *Arc Poetry Magazine* 77 (Spring 2015) and is now collected in *This Accident of Being Lost: Songs and Stories* (Toronto: House of Anansi Press, 2017). The musical track appears on Simpson's 2016 album *f(l)ight*.

[26] Amanda Strong and Leanne Betasamosake Simpson, "Amanda Strong and Leanne Betasamosake Simpson in Conversation," Remai Modern, Saskatoon, Canada, January 26, 2019, https://www.remaimodern.org/field/watch-listen/amanda-strong-and-leanne-betasamosake-simpson-in-conversation.

[27] "Strong and Simpson in Conversation."

Capitalist Realism and Indigenous Futurism

Potawatomi ecologist Robin Wall Kimmerer writes about living "under the guardianship" of twin sugar maple trees on her property, sharing a bond with the trees that is "physical, emotional, and spiritual."[28] For Kimmerer, the trees aren't simply natural resources or sources of calories; they are part of a web of responsibility, if not kinship, between herself, the trees, her daughters, the homesteaders who originally planted the trees, and whoever may occupy the property after she is no longer there. This is to say that sugar maples are integral to the fabric of the universe for Potawatomi people and those with similar cosmologies. "The Maples," she explains, "each year carry out their part of the Original Instructions, to care for the people."[29] Kyle Whyte, a Potawatomi philosopher, writes similarly about the Menominee worldview, saying that the "forest ecosystem is understood in terms of kinship relationships, where 'elder plants,' such as maples, have rich knowledge to share with humans who show respect."[30] Because the relationship between someone like Biidaaban and maple trees is intergenerational, symbiotic, spiritual, and even cosmological, the disruption of such a relationship has dramatic significance. This disruption takes place in the form of dispossession of land and the implementation of property rights that disallow traditional harvesting practices, as well as other cultural

[28] Robin Wall Kimmerer, *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge and the Teachings of Plants* (Minneapolis: Milkweed Editions, 2013), 70.
[29] Kimmerer, *Braiding Sweetgrass*, 68.
[30] Kyle P. Whyte, "Indigenous Science (Fiction) for the Anthropocene: Ancestral Dystopias and Fantasies of Climate Change Crises," *Environment and Planning E: Nature and Space* 1, no. 1–2 (March 2018): 233, https://doi.org/10.1177/2514848618777621.

practices. Climate change also contributes to this disruption with warmer growing seasons resulting in stunted sugar maple growth and decreased sap production.[31] Whyte writes elsewhere that "disruptions of webs of responsibilities involved in relations with elders, berries, and maple trees jeopardize some of what is valued intrinsically and extrinsically by certain indigenous people."[32] For those who see sugar maples as world sustaining and a part of inherent responsibilities, a disrupted relationship, like the one faced by Biidaaban, is world threatening. In fact, Whyte argues that "Indigenous peoples everywhere have been through repeated apocalypses," and impediments to sap harvesting are a part of that history.[33]

The challenge of envisioning alternatives to capitalism—central to so many cultural and aesthetic debates—has been forcefully articulated by British cultural theorist Mark Fisher in his concept of "capitalist realism." Fisher describes a condition in which capitalism's dominance is so totalizing that imagining a world beyond it becomes nearly impossible. At the close of the Cold War, U.S. political scientist Francis Fukuyama famously declared the "end of history," positioning Western liberal democracy and global capitalism not just as victorious, but as inevitable—the final form of human government. There has been a "total exhaustion

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[31] Stephen N. Matthews and Louis R. Iverson, "Managing for Delicious Ecosystem Service under Climate Change: Can United States Sugar Maple (*Acer saccharum*) Syrup Production Be Maintained in a Warming Climate?," *International Journal of Biodiversity Science, Ecosystem Services & Management* 13, no. 2 (June 18, 2021): 40–52, https://doi.org/10.1080/21513732.2017.1285815.
[32] Kyle Powys Whyte, "Indigenous Women, Climate Change Impacts, and Collective Action," *Hypatia* 29, no. 3 (Summer 2014): 604, https://doi.org/10.1111/hypa.12089.
[33] Whyte, "Indigenous Science (Fiction)," 238.

of viable systematic alternatives to Western liberalism," Fukuyama argued, declaring "the end point of mankind's ideological evolution and the universalization of Western liberal democracy as the final form of human government."[34] Fisher builds on this claim to argue that capitalism "seamlessly occupies the horizons of the thinkable."[35] Yet for Fisher, this state is not immutable. If capitalism's realism can be shown to be historically contingent, rather than inevitable or natural, it can be disrupted. He writes, "An ideological position can never be really successful until it is naturalized, and it cannot be naturalized while it is still thought of as a value rather than a fact."[36]

This framing helps clarify the stakes of *Biidaaban*'s refusal to participate in capitalist time and its rejection of normative Western teleologies. Rather than projecting a distant utopia or indulging dystopic collapse, Amanda Strong's film works within Indigenous epistemologies and grounded practices to denaturalize the present and animate a radically different relation to land, time, and history. Where capitalist realism suggests the foreclosure of futurity, *Biidaaban* insists on the continuity of other times and lifeways—ones that persist, recur, and emerge in the

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[34] Francis Fukuyama, "The End of History?," *The National Interest*, no. 16 (1989): 3–4, https://www.jstor.org/stable/24027184. Though Fukuyama would later revise this thesis, seeing new threats to liberal democracy in biotechnology, he nonetheless links human nature with liberal capitalism. Donrich W. Jordaan, a South African bioethicist, has noted that if Fukuyama's "hyperbolic 'worldwide convergence' on liberal democracy is caused by human nature, human nature was slumbering or suppressed for 99% of known history." Donrich W. Jordaan, "Antipromethean Fallacies: A Critique of Fukuyama's Bioethics," *Biotechnology Law Report* 28, no. 5 (December 19, 2009): 579, https://doi.org/10.1089/blr.2009.991.

[35] Mark Fisher, *Capitalist Realism: Is There No Alternative?* (Ropley, UK: Zero Books, 2009), 8.

[36] Fisher, *Capitalist Realism*, 16–17.

labor of syrup harvesting, animation, and intergenerational kinship. The film does not so much imagine another world as bring that world into being through material, embodied, and culturally specific acts of resurgence.

Alternative worlds are made manifest in stories of sap and syrup. Simpson tells a version of a Michi Saagiig Nishnaabeg story in which Binoojiinh, a gender-nonconforming child, learns to harvest maple sap from Ajidamoo (a red squirrel). Binoojiinh shares this knowledge with their mother, and the two cook the sap, making syrup, which they share with their community. Reflecting on the story, Simpson writes that Binoojiinh's "existence as a hub of intelligent Nishnaabeg relationality may be threatened" by dispossession, ecological destruction, and colonial gender violence, as Whyte also suggests. But nevertheless, Simpson continues, by being present and making maple sugar, Binoojiinh propels the Nishnaabeg "to rebel against the permanence of settler colonial reality and not just 'dream alternative realities' but to create them."[37] Like Binoojiinh, I see Biidaaban and Sabe's sap-collecting practice as a world-building project that is much more than a dream. Given the centrality of sugar maples to people of what Kimmerer calls "Maple Nation," *Biidaaban* serves as an embodiment of resistance and as a way of creating an anti-colonial, anti-capitalist world. In this analysis, I draw on Coulthard's thinking about the entanglement between colonialism and capitalism. Noting the centrality of the dispossession of Indigenous people from their land to capitalism, Coulthard argues that "reestablishing

[37] Leanne Betasamosake Simpson, *As We Have Always Done: Indigenous Freedom through Radical Resistance* (Minneapolis: University of Minnesota Press, 2017), 152–53.

the colonial relation of dispossession as a co-foundational feature of our understanding of and critical engagement with capitalism opens up the possibility of developing a more ecologically attentive critique of colonial-capitalist accumulation."[38] In this way, practices that counter or refuse colonial dispossession also strike at the heart of capitalism. Fisher insisted that under capitalist realism, "capitalism seamlessly occupies the horizons of the thinkable."[39] These observations about capitalism's ability to subdue the imagination are perceptive, but the answer to the book's subtitle, "Is There No Alternative?," is "There is." As Simpson has written, and as Biidaaban and Sabe show in the film, Indigenous people "have more expertise in anticapitalism … than any other group of people on the planet. We have thousands of years of experience building and living in societies outside of global capitalism."[40]

Certain works of Indigenous futurism, such as *Biidaaban*, are capable of resisting the illusion of colonial permanence because of their common acknowledgment of already existing dystopian conditions, prioritization of direct embodied action, and reliance on intergenerational thinking. Grace L. Dillon, an Anishinaabe scholar of science fiction, writes that "Native slipstream," a subgenre of speculative fiction, "views time as pasts, presents, and futures that flow together like a navigable stream." For her this term describes "writing that does not simply seem

[38] Glen Sean Coulthard, *Red Skin, White Masks: Rejecting the Colonial Politics of Recognition* (Minneapolis: University of Minnesota Press, 2014), 14.
[39] Fisher, *Capitalist Realism*, 8.
[40] Simpson, *As We Have Always Done*, 72–73.

avant-garde but models a cultural experience of reality," noting that slipstream has been around for millennia.[41] Because of this longevity, Simpson has written that from the perspective of Indigenous aesthetics, the idea of Indigenous science fiction doesn't make sense to her. "I like writing *multidimensionality* into my work not because I'm trying to write speculative fiction," she explains, "but because that's how Indigenous worlds work."[42] But whether Indigenous slipstream is strictly science fiction or not, there are clearly generative, world-making possibilities inherent in the genre. Dillon explains that slipstream allows "authors to recover the Native space of the past, to bring it to the attention of contemporary readers, and to build better futures."[43] This means that while some Native science fiction may be built on foundations of loss, they do not foreclose on hope and agency.

Biidaaban is set in a world ravaged by environmental destruction and state oppression (that is to say, a more or less realistic world), but it rejects nihilism and despondency. Dillon provides a means for understanding this distinction by introducing the Anishinaabemowin (Ojibwe) word *biskaabiiyang*, which she says connotes "the process of 'returning to ourselves,' which involves discovering how personally one is affected by colonization, discarding the emotional and psychological baggage carried from its impact, and recovering ancestral traditions in order to adapt in our post-Native Apocalypse world."[44] Dillon further explains that

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[41] Grace L. Dillon, *Walking the Clouds: An Anthology of Indigenous Science Fiction* (Tucson: University of Arizona Press, 2012), 3–4.
[42] Simpson, *As We Have Always Done*, 201.
[43] Dillon, *Walking the Clouds*, 4.
[44] Dillon, *Walking the Clouds*, 10.

biskaabiiyang "requires *changing* rather than *imitating* Eurowestern concepts." A close look at *Biidaaban* reveals how Biidaaban and Sabe confront a centuries-long apocalypse and utilize *biskaabiiyang* to overcome capitalist realism to bring about a more liberatory world in the face of forces that naturalize the dominant order.

The Dawn Comes

Like Binoojiinh, Biidaaban is a non-binary character referred to by Strong in interviews with they/them pronouns. Biidaaban's gender identity is only explicitly referenced in the last line of Simpson's closing narration: "meet me at the underpass, rebellion is on their way," which represents a change from "her" in the original version of the poem.[45] But this is not a minor point for Strong and Simpson, for whom representing a diversity of genders in Indigenous stories is important. During a 2019 conversation at Simon Fraser University with Simpson, *Biidaaban* co-writer Bracken Hanuse Corlett (Wuikinuxv and Klahoose Nations), and artist Whess Harman (Carrier Wit'at), the inspiration and model for the Biidaaban puppet, Strong said that though Biidaaban's gender identity is not made explicit, this was "not a strategy around queerness," but rather was a strategy of Indigenous storytelling that sought both to avoid exploiting the character's gender identity and to avoid Western forms of narrative that demand explanation.[46] In the same conversation, Harman said

[45] Simpson, "caribou ghosts & untold stories," *This Accident of Being Lost*, 34.
[46] Leanne Betasamosake Simpson et al., President's Dream Colloquium on Creative Ecologies: "*Biidaaban (The Dawn Comes)*," Simon Fraser University, Vancouver, Canada, October 17, 2019, https://www.sfu.ca/gradstudies/life-community/news-events/events/pdc/2019-creative-ecologies/leanne-simpson.html.

that it was really important for them that the film didn't directly address Biidaaban's gender identity or transness, which they feel can sometimes be reductive. This approach of resisting disclosure and encouraging viewers to see their audienceship as labor is a key feature of Strong's practice to which we will return.

Viewers are introduced to Biidaaban in an early morning, during which the sky is dark with just a hint of purple from the coming dawn. Biidaaban is shown to be living in a small, clapboard house nestled among trees. The botanical world is present but subdued. A tea kettle whistles while Biidaaban tosses and turns in bed—uninterested or unmotivated in getting up at that moment. An unknown figure removes the kettle from the stove and gently prods Biidaaban awake. The figure, Sabe, is revealed to be a large being that appears to be part human and part forest, with roots growing from their head like veins and a mossy green skin that recalls tree bark or lichen, layered and alive. Hunched over, their head nearly hits the ceiling, and they are slightly clumsy, if only because of the confined space. Biidaaban is not surprised by Sabe's presence but struggles to get out of bed. The two communicate through a text messaging device that is made of rock and organic material, and Biidaaban receives a text from Sabe that reads "ninaatigoog" (maple trees)—a name, a summons, and a reminder of responsibility.[47] This call from their more-than-human kin finally encourages Biidaaban out of bed. This finally encourages Biidaaban out of

[47] Unless otherwise noted, all Anishinaabemowin/Ojibwe-to-English translations in this chapter come either from *Biidaaban*'s in-film translations or *The Ojibwe People's Dictionary*, University of Minnesota, https://ojibwe.lib.umn.edu.

bed; the two share a hot tea in silence before leaving the house under the predawn darkness (fig. 2.4).



FIGURE 2.4. Still from *Biidaaban (The Dawn Comes)*, directed by Amanda Strong, 2018. Reproduced with permission from Spotted Fawn Productions.

A sense of somberness and melancholy pervades this introduction. Biidaaban is not just tired but appears to need Sabe's encouragement. They are nonetheless committed to whatever will follow, since Sabe's one-word text was sufficient to get Biidaaban out of bed. Biidaaban walks down a dark, lonely path. Sabe is no longer behind them, but a blue spark of energy follows Biidaaban in the telephone wires overhead, suggesting Sabe's continued presence. Biidaaban then encounters Ghost Wolf (a counterpart to Ghost Caribou from the film's opening scene), whose presence causes Biidaaban to tear up and clutch a pouch close to her heart. Ghost Wolf then

disappears. This is an early indication that *Biidaaban* is a story of loss—a story of nostalgia. This apparition seems to represent a constellation of losses, a key signifier of Native apocalypse for Dillon; but these losses are not fatalistic and do not foreclose on the possibility of a different world. In fact, they seem to reinforce Biidaaban's resolve.

Characters named Sabe appear in several of Simpson's short stories, variously referred to by they, she, and he pronouns and described as "a Bagwajiwininiwag within the context of the Nishnaabeg, known in English as Bigfoot."[48] In "Plight," as in *Biidaaban*, Sabe assists the narrator in collecting sap from urban sugar maples. In that story, Sabe is described as a frequent texter and is visible only to the narrator. In "Doing the Right Things," Sabe accompanies the narrator as she takes a gun safety class in a white conservative man's basement, invisibly supporting her while she endures the racism and misogyny of the instructors. In that story, Sabe is described like a human friend—he came along even though the narrator asked him not to, the narrator tells him to stop touching her when he tries to comfort her. In "she told him 10 000 years of everything," there are two characters who are both revealed to be Sabe. One plays guitar in a band and the other is an occasional arts and culture freelance writer. "[A]lthough sabe appeared to be in her late thirties," the narrator notes of the writer Sabe:

> she'd been on earth for much longer than that. in the old days, when only the nishnaabeg were here, she had a different name, a gentler, kinder name. she lived among them, but she rarely revealed herself. her job in those days, was

[48] Simpson, *This Accident of Being Lost*, 121.

> like her job now, she looked after people who had gotten lost, both physically and metaphorically.[49]

The guitarist is described almost identically. Strong and Simpson's depictions of Sabe do not place the character firmly in the past or the present, and they resist other binaries, such as technology versus nature. In *Biidaaban*, they are co-present with Biidaaban while also thousands of years old. Sabe is ancestral and partly composed of plant matter—moss, lichen, root—and yet they can text.[50] These are not contradictory features but coexistent ones: ancient, rooted lifeforms communicating in the present. Sabe is one of many elements in *Biidaaban* that speak to the film's title, an Anishinaabemowin word that can be translated as "the dawn comes."

Writing about Anishinaabe artist Lisa Jackson's 2018 virtual reality experience with a similar title, *Biidaaban: First Light*, journalist Rhiannon Johnson (Anishinaabe) elaborates on the word's meaning, explaining that it more specifically refers to "the moment of the first light of dawn. It's a particular moment where the feeling of night is still there, yet the new day is coming" (Jackson's *Biidaaban* is the subject of Chapter 3).[51] Simpson offers another interpretation, noting that *bii* means "the future is coming at you," that *daa* refers to living in the present or in a certain place, and that *ban* is a verb used when someone has passed on or when something no

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[49] Leanne Betasamosake Simpson, "she told him 10 000 years of everything," *Islands of Decolonial Love: Stories and Songs* (Winnipeg: ARP Books, 2015), 75.
[50] Real lichen is also used on the stop-motion puppet.
[51] Rhiannon Johnson, "Anishinaabe Artist's New VR Experience Takes an Indigenous Futurist Look at Toronto," CBC News, April 14, 2018, https://www.cbc.ca/news/indigenous/lisa-jackson-biidaaban-vr-future-toronto-1.4619041.

longer exists. Her interpretation of this word is that it suggests that the present "is a colliding of the past and the future."[52] There is, then, a sense of the slipstream embedded in the very title of the film and the lead character themself. During her 2019 conversation with Strong at the Remai Modern, Simpson explained why this concept resonates with her:

> As an Anishinaabe person, I'm not in the past; my culture's not in the past. I'm here; I'm present. It's a living, breathing culture. My ancestors are here with me. The spirit world is here with me, and it's all animated and alive and living and it doesn't matter if there are a thousand people living in it and houses all over it and roads, I'm there anyway living as an Anishinaabe, engaging in my land-based practices.[53]

And so Biidaaban is guided throughout the film by Sabe, a being who is from neither the past, present, nor future, but all three—an ancestor or spirit who is always present. And while some viewers might interpret some of the characters in the film as firmly rooted in the past, such as Ghost Caribou and Ghost Wolf, Sabe is a reminder of the nonlinearity of time in Biidaaban's world, regardless of whether one's form is physical or more incorporeal. Intergenerational time does not imply linearity, just as the cycles of plant life—sugaring seasons, dormancy, slow growth—resist the forward march of settler-colonial time. Additionally, this nonlinear temporality itself, as marked by the word *biidaaban*, suggests that a new day is coming. Sabe's

[52] Simpson credits this explanation of *biidaaban*'s meaning to Nishnaabeg artist Susan Blight, who learned from Alex McKay, an elder from Kitchenuhmaykoosib Inninuwug in northwestern Ontario. Simpson, *As We Have Always Done*, 17.
[53] "Strong and Simpson in Conversation."

presence, regardless of how the events of the film unfold, seems to promise regeneration.

Art as World Making

In her 2017 book, *As We Have Always Done: Indigenous Freedom through Radical Resistance*, Simpson offers perspective on Indigenous aesthetic practice that foregrounds art's generative capabilities. Drawing on Michi Saagiig Nishnaabeg thought, Simpson's ontology is at its core profoundly productive—not in an industrial sense but in the sense of creating meaning, relationships, and worlds. This world-making impulse resonates with the alternative visual and epistemological frameworks explored in the previous chapter, especially the notion of botanical-multispecies visuality. There, plant life was shown to interrupt the totalizing gaze of humanist visuality and instead offer a model grounded in humility, relationality, and embodied encounter. Simpson's work continues and deepens this turn, linking meaning-making not just to interspecies contact but to reciprocal practices of caretaking and storying that are both aesthetic and material. Central to this productivity is a collapsing of praxis and theory in Nishnaabeg thought. Simpson explains how in Nishnaabeg thought "*how* we live, *how* we organize, *how* we engage in the world—the process—not only frames the outcome, it is the information." "The *how* changes us," she continues. This extends to the production of knowledge as well. Simpson writes that the act of doing "generates and animates theory within Indigenous contexts, and it is

the crucial intellectual mode for generating knowledge."[54] For Simpson, a Nishnaabe person knows because they *are doing*. Knowledge is not static, nor does it seem that it is something that can be acquired and stored; rather, it is continuously generated. In this sense, *Biidaaban* is a story of Biidaaban's knowing, and the film itself is a form of knowledge construction on the part of Strong and her collaborators.

It is not, however, only knowledge that is constantly produced in Simpson's kinetic ontology. She writes that a parameter of Nishnaabeg thought is "the making and remaking of the world in a generative fashion within Indigenous bodies that are engaged in accountable relationships with other beings."[55] Simpson explains further that in the past "Nishnaabeg woke up each morning and built Nishnaabeg life every day," and that governance itself was made or remade every day.[56] It is for these reasons that the act of making or storytelling is so fundamental to Simpson's thought; although it is not the only process, artistic practice is clearly an important process for creating the Nishnaabeg world for her. In fact, the causal bias of English may make it difficult to write about this kind of practice accurately; as I interpret Simpson's thought, the Nishnaabeg world doesn't come into being as a *result* of doing but in the *act* of doing. And so, in similar fashion, Biidaaban and Strong don't only create knowledge, they create worlds by their embodied practices (sap collecting and animation). Simpson also refers to Nishnaabeg practices several times as "algorithms," further defining this term as "coded processes that generate solutions to

[54] Simpson, *As We Have Always Done,* 19–20.
[55] Simpson, *As We Have Always Done*, 21.
[56] Simpson, *As We Have Always Done*, 23.

problems of occupation and erasure and to life on earth."[57] While Simpson is likely using the term metaphorically, we can imagine these "algorithms" less as computational sequences and more as ecological processes—rhythmic, responsive, and grounded in the more-than-human. These processes unfold in nonlinear and collaborative ways. They carry instructions but not blueprints; they are living patterns shaped through time, land, and relation. This image of the algorithm nonetheless highlights an important aspect of Simpson's aesthetic theory, which is that rather than revealing fundamental truths, art and stories can serve instructional—but always collaborative—roles. Art-as-algorithm helps one create a world; it does not simply present them with a vision of the world as it must be.

There is some resonance with Simpson's aesthetics and that of the French philosopher Jacques Rancière. For him, "artistic practices are 'ways of doing and making' that intervene in the general distribution of ways of doing and making."[58] In other words, artistic practices are generative and shape the world around them. For Rancière, art is of extreme importance to politics; "artistic practices are not 'exceptions' to other practices," he writes, "they represent and reconfigure the distribution of these activities."[59] In his book *The Emancipated Spectator,* Rancière argues that "emancipation begins when we challenge the opposition between viewing and acting."[60] Making or viewing art, then, changes ourselves and the world.

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[57] Simpson, *As We Have Always Done*, 34.
[58] Jacques Rancière, *The Politics of Aesthetics* (London: Continuum, 2008), 13.
[59] Rancière, *The Politics of Aesthetics*, 45.
[60] Jacques Rancière, *The Emancipated Spectator* (London: Verso, 2009), 13.

Rancière uses the phrase "the distribution of the sensible" to refer to "the system of self-evident facts of sense perception that simultaneously discloses the existence of something in common and the delimitations that define the respective parts and positions within it."[61] Redistributing this system is the work of politics—and of artistic practice. Joseph J. Tanke, a philosopher of aesthetics writing on Rancière, argues that "dissensus, whether the straightforward political variety or the type employed by art, is the means by which the sensible is deprived of its self-evidence, punctuated, and subjected to dispute."[62] Art, then, is both generative and revealing. Though Simpson and Rancière write from very different philosophical contexts, they share certain similarities. Their differences, however, are productive in understanding how a work of art like *Biidaaban* functions politically. We are all world-making beings, and Nishnaabeg thought seems to recognize this. Dominant Western thought obscures this fact in favor of self-evidence. Creating is always political, and creating dissensus is an extension of that politics.

The idea of art and storytelling as embodied instructional practices is shared by multiple Indigenous thinkers writing across a variety of contexts. In an essay on Indigenous futurism, writer Lou Cornum (Navajo) suggests that Indigenous "stories are a technology we use to guide us through the chaos of overlapping times and spaces."[63] For Cornum this invocation of technology is not meant as a sort of arms

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[61] Rancière, *The Politics of Aesthetics*, 12.
[62] Joseph J. Tanke, *Jacques Rancière: An Introduction*. (London: Bloomsbury, 2011), 2.4, ProQuest Ebook Central.
[63] Lou Cornum, "The Creation Story is a Spaceship: Indigenous Futurism and Decolonial Deep Space," *Voz-á-Voz* (2015),

race against Western technology, but rather this is an alternative technology described as "profound and generative" as opposed to "extractive, destructive, [and] life-denying." The kind of technology described by Cornum is meant to help actively build a new present or future. Cornum writes that "technology is never just about the tools themselves—it is about how we use them." For Cornum, Indigenous stories-as-technologies instruct through an active relationship between the story, the listener, and presumably myriad other actors, including the storyteller and others connected to the story. Similarly, writing about Pueblo visual artist Virgil Ortiz, Choctaw art historian Chelsea M. Herr writes that for Indigenous people, storytelling "is a tool of continuance, as well as a means of expressing the linkages between past, present, and future," evoking language reminiscent of the word *biidaaban* and of slipstream.[64] "To tell a story," she elaborates, "either in word or in image, is to embody an existence beyond your own." This form of storytelling, which for both Cornum and Herr applies to the visual arts, is then a process of recreating the world along with a deep network of others. Writing about the role of science in Indigenous science fiction, Dillon invokes the Anishinaabemowin word *gikendaasowin*, which in addition to signaling scientific discourse also entails botanical knowledge, knowledge of the land, knowledge itself, teachings, and ways of living.[65]

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https://web.archive.org/web/20220927090040/http://www.vozavoz.ca/feature/lindsay-catherine-cornum.

[64] Chelsea M. Herr, "The Evolution of Revolution: Virgil Ortiz's Pueblo Revolt 1680/2180 as an Assertion of Native Presence Through Indigenous Futurisms," *World Art* 9, no. 2 (2019): 128, https://doi.org/10.1080/21500894.2019.1604425.

[65] Dillon, *Walking the Clouds*, 8.

Contrasting how "Western art music concert protocols [situate music] as an object of aesthetic contemplation" with Indigenous musical practices, sound studies scholar Dylan Robinson (Stó:lō) states that Indigenous songs serve many different functions, such as law, medicine, and primary historical documentation.[66] He elaborates that there is an ontological difference between Western notions of songs that "simply promote healing, or refer to history and law, and songs that are the equivalent of law, Western medicine, and primary historical documentation."[67] Within a Western context, one might casually say that a certain song was medicine for them during a difficult time, but this is a metaphorical use that does not adhere to how the category of "medicine" is otherwise deployed in that cultural and linguistic tradition. Likewise, a traditional English song, for example, might be used by a historian as one of many artifacts used to interpret a particular moment in history, but the song itself is unlikely to be admitted as the principal historical text in Western history. The song would never be equivalent to a scholarly book. A key to these distinctions is the role of embodiment not just in Indigenous aesthetic practices, but in law and history. Robinson explains that songs *as* law have a function and are more than representational. Referring to a 1985 land claims case before the Supreme Court of British Columbia and the refusal by the presiding judge to accept songs as evidence, Robinson writes that "in this more-than-representational frame, the limx oo'y [a Gitxsan dirge song] is not simply representing the place, speaking about a

[66] Dylan Robinson, *Hungry Listening: Resonant Theory for Indigenous Sound Studies* (Minneapolis: University of Minnesota Press, 2020), 8.
[67] Robinson, *Hungry Listening*, 268n7.

place, or making those who hear it remember this place; it acts *as* the 'law of Indian people.'"[68] This, he continues, is "a legal order that functions through embodiment." That is to say, the limx oo'y becomes law through its embodied performance.

I want to be careful not to suggest uniformity in what Simpson, Cornum, Herr, Dillon, and Robinson write nor in their subjects of study. But I draw from these writers an appreciation for how the Indigenous artistic practices possess world-making capabilities. With these observations in mind, there is no separation between knowledge and the media of its production. *Biidaaban*, then, is not a vessel of knowledge; it *is* knowledge. It is cultural continuance and world making in the same way that Biidaaban's syrup making is. Simpson's story "The Gift is in the Making" tells of how Nishnaabeg teacher Nanabush taught the Nishnaabeg to make maple sugar from tree sap. The story's title comes from the closing line: rather than maple sugar itself being Nanabush's gift, the Nishnaabeg "know that the real gift was in the making, and that, without love, making just wasn't possible."[69] The gift, then, is not the sugar, but the sustained, reciprocal process between human and maple. In Simpson's framing, the tree is not just the means by which the gift is obtained; it is the partner in the making. That Strong turns to stop-motion—another slow and embodied form—underscores the kinship between this artistic labor and land-based practice. This relationship reiterates the idea that acts of creation and cultural continuance are valuable in themselves. Strong referenced this idea in the 2019

[68] Robinson, *Hungry Listening*, 44–45.
[69] Leanne Simpson, "The Gift is in the Making," *The Gift Is in the Making: Anishinaabeg Stories* (Winnipeg: Portage & Main Press, 2013), 93.

conversation at Simon Fraser University, saying that the core of making, and even of watching, the film is the idea that the gift is in the making. Like the making of syrup and other cultural practices, filmmaking is a community practice and stop-motion animation a particularly labor intensive one. It takes six months, she explains, for ten people to make a single puppet. In the same conversation, Simpson said that as an Anishinaabe person, stop-motion really made sense for this story. In the Remai Modern conversation, she elaborated, noting that stop-motion animation "goes along well with some of our practices as Anishinaabe people. It's very, very labor intensive. It's very rigorous." Contrasting *Biidaaban* with the idea that animation is just for children, Simpson remarked on the film's density and nuance, likening the film to being in a lodge or listening to teachings.

The relationality that is built into the idea of art-as-knowledge also means that the viewer is an active participant in the film. This is perhaps an additional layer of the multidimensionality of Native slipstream, as there is no simple beginning or end to the creation of the work; rather, it is part of an ongoing process of creation. In the Remai Modern conversation with Simpson, Strong talked about the *work* that audiences must engage in to experience *Biidaaban*. "We're not going to literally tell you what's happening," she says. "There's work that has to be done for yourself to try to decode it or find some of these symbolisms." Though her comment was broadly within the context of general festival film audiences, it indicates a perspective on art that is focused on the active generation of knowledge and worlds. This approach to filmmaking, however, has resulted in pushback from audiences and festival

programmers who are uncomfortable with the film's ambiguities and certain illegibility for people from other cultural traditions. Strong tells of a conversation with the Berlin International Film Festival following *Biidaaban*'s rejection. Though the film was among the most discussed among programmers, they felt, as she retells the conversation, that there wasn't enough information for the audience.[70] In reactions such as these we can see the problem that Robinson identifies in confusing Western and Indigenous aesthetics; and in fact, Strong has said that the making of *Biidaaban* couldn't fit into the structure of Western filmmaking.[71] The organic collaboration, the honoring of stories and traditions, and the coding of meaning in ways that render some aspects of the story less intelligible to non-Indigenous people are all aspects of a filmmaking practice centered on Indigenous values and approaches—this is a coded, algorithmic model like the one described by Simpson. Drawing on the work of Cree/Dene scholar Jarrett Martineau, Simpson has also written that some Indigenous artists are engaged in "a refusing of forms of visibility within settler colonial realities that render in Indigenous vulnerable to commodification and control."[72] We see this refusal in Strong's insistence on creating a work that requires intellectual and emotional labor to decode while there are nonetheless also built-in limits to that decoding. As Biidaaban and Sabe counter the dispossession of land through their practice, Strong also resists a conquering colonial gaze through hers.

[70] President's Dream Colloquium: "*Biidaaban (The Dawn Comes)*."
[71] President's Dream Colloquium: "*Biidaaban (The Dawn Comes)*."
[72] Simpson, *As We Have Always Done*, 198.

The materiality of *Biidaaban* also speaks to the film's generative capabilities. Strong praised the medium's ability to "create worlds" that would be more difficult in other media, such as live action. She has also said that there is something "magical" about the puppets, which she refers to as living beings. There are two puppets each for Biidaaban and Sabe, for example, and though each pair are made from the same cast, she says they have different personalities. In the conversation at Simon Fraser University, the puppets for Biidaaban, Sabe, and Ghost Caribou stand on a table alongside the other panel participants, suggesting a co-equal role. The physicality of the puppets is a commanding presence, and they are often exhibited (along with other props) in museums and galleries. For example, Biidaaban and Sabe were exhibited in *INSURGENCE/RESURGENCE* (2017–18), a group exhibition at the Winnipeg Art Gallery, before the film was even completed. This is unusual for a film and highlights how the puppets and props have lives that extend beyond the screen itself; they represent the permeability between the world of the film and what might reductively be called the "real" world.[73] Simpson herself has been shaped by these puppets.

[73] *Biidaaban* premiered at the 2018 Toronto International Film Festival, and also screened at a diverse selection of festivals, including the imagineNATIVE Film and Media Arts Festival (2018), the Ottawa International Animation Festival (2018), the Vancouver International Film Festival (2018), the Seattle International Film Festival (2019), and the Frameline international LGBTQ+ film festival (2019), among others. The film was also nominated for Best Animated Short Film at the 2019 Canadian Screen Awards. Yet, unlike most festival entries, *Biidaaban* has had an equally varied exhibition tour across North America, and particularly in western Canada. Either through video installations and/or the installation of props and sets, *Biidaaban* has been shown at the Anchorage Museum, Art Gallery of Swift Current, MOCA Cleveland, Museum of Anthropology at UBC, the Remai Modern, San Francisco International Airport Museum, Wanuskewin Heritage Park, the Winnipeg Art Gallery, and elsewhere.

Seeing the puppets move "and become their own beings," she explained at Simon Fraser University, "has inspired me to think more about their characters and to write more stories about them." She explains this liveliness as a deepening of the stories of Biidaaban and Sabe, as well as of the teachings, values, and philosophies that they embody. It is in this sense that *Biidaaban* as a film is an act of continuous world building and that the boundary blurring potential of slipstream is not relegated to worlds of fiction.

Refusing Recognition and Returning to Self

Examining Biidaaban's syrup-making practice, as well as Strong's aesthetic refusal, through the prism of Coulthard's theory of "grounded normativity" sheds light on the generative nature of both the character and the film. After leaving Biidaaban's house, they and Sabe, who is now present in their humanoid form, later emerge in a suburban neighborhood where the houses are sterile, made of brick, and tightly packed like sardines, unlike Biidaaban's own home. Sabe walks directly into a sugar maple and dematerializes; a translucent green energy appears from within the tree's trunk and then travels underground, illuminating the root and mycelial networks. At this point, Biidaaban gets to work stenciling an Anishinaabe thunderbird—a spiritual being that protects the Anishinaabe people—on the tree's trunk so that it can be identified as a sugar maple in the spring after its leaves have

fallen but it is ready for tapping.[74] Biidaaban then pulls a stack of flyers from their backpack.

One of the most apparent connections between *Biidaaban* and Simpson's short stories is "Plight," from her 2017 collection *This Accident of Being Lost*. In the story, the unnamed narrator and two Indigenous friends strategize to collect sap from sugar maples in an Ontario suburb. The narrator acknowledges that there is a way to collect the sap of which the liberal-leaning residents would approve:

> Hand out the flyers first. Have a community meeting. Ask permission. Listen to their paternalistic bullshit and feedback. Let them have influence. Let them bask in the plight of Native people so they can feel self-righteous. Make them feel better, and when reconciliation comes up at the next dinner party, they can hold us up as the solution and brag to their real friends about our plight.[75]

This tactic for achieving results, which seems almost second nature to the narrator, is a textbook example of the politics of recognition of which Coulthard writes. It places all of the power with the colonial state; and the friends, who call themselves The Fourth World Problems (FWP) Collective, must request magnanimity and pity in order to act freely. This also illustrates the farce of such an interaction: the neighbors will gladly have the FWP Collective harvest the sap from their trees but only if asked; otherwise, the violence of the state might be employed.

In his book *Red Skin, White Masks: Rejecting the Colonial Politics of Recognition*, Coulthard argues against the "politics of recognition," which he says is a

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[74] "Thunderbird," Gibagadinamaagoom, University of Pennsylvania, accessed March 25, 2021, https://ojibwearchive.sas.upenn.edu/thunderbird-cultural-context.
[75] Simpson, "Plight," *This Accident of Being Lost*, 5.

prevailing component of Indigenous politics in Canada. The politics of recognition, he argues, "promises to reproduce the very configurations of colonialist, racist, patriarchal state power that Indigenous peoples' demands for recognition have historically sought to transcend."[76] Coulthard identifies G.W.F. Hegel's master-slave dialectic as the foundation for the politics of recognition. Drawing on anti-colonial philosopher Frantz Fanon's *Black Skin, White Masks*, for which his own book is named, Coulthard argues that recognition is part of the process of transforming "the colonized population into *subjects* of imperial rule," rather than being liberatory.[77]

Coulthard also argues that rather than racism or religion, the primary motive for settler colonialism is access to territory. Though the means of Canadian settler colonialism have shifted over time, Coulthard explains, "the *ends* have always remained the same: to shore up continued access to Indigenous peoples' territories for the purpose of state formation, settlement, and capitalist development."[78] From the centrality of the dispossession of land to colonialism, Coulthard extrapolates:

> Stated bluntly, the theory and practice of Indigenous anticolonialism, including Indigenous anticapitalism, is best understood as a struggle primarily inspired by and oriented around *the question of land*—a struggle not only *for* land in the material sense, but also deeply *informed* by what the land *as a system of reciprocal relations and obligations* can teach us about living our lives in relation to one another and the natural world in nondominating and nonexploitative terms.[79]

[76] Coulthard, *Red Skin, White Masks*, 7.
[77] Coulthard, *Red Skin, White Masks*, 31.
[78] Coulthard, *Red Skin, White Masks*, 125.
[79] Coulthard, *Red Skin, White Masks*, 13.

Coulthard calls this form of resistance "grounded normativity" and argues that Fanon redirects "our attention to the host of *self-affirmative* cultural practices that colonized peoples often critically engage in to empower themselves, as opposed to relying too heavily on the subjectifying apparatus of the state."[80] Grounded normativity, then, resonates with Dillon's claim that *biskaabiiyang* "requires *changing* rather than *imitating* Eurowestern concepts."[81] In *As We Have Always Done*, Simpson elaborates on these ideas, arguing that "engagement with Indigenous systems changes Indigenous peoples" and that this "requires less engagement with the state and more presence within Indigenous realities."[82] In fact, Simpson also alludes to the *biiskabiyang*, describing it as "an individual and collective process of decolonization and resurgence" and an "embodied process of freedom."[83] What each of these thinkers argues for is sidestepping colonial subjectification in favor of direct action based on long-held Indigenous traditional and cultural practices.

In "Plight," the FWP Collective doesn't want recognition. The narrator says that the collective considered framing the action as performance art, mockingly predicting: "We could probably even get a grant." But they ultimately conclude that

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[80] Coulthard, *Red Skin, White Masks*, 23.
[81] *Normative* in political theory refers to the oughts and shoulds of a political or moral system. As I interpret it, *grounded* is meant both literally and figuratively to refer to the deep focus on land. As Coulthard writes, "Indigenous struggles against capitalist imperialism" are "deeply *informed by* what the land as a mode of reciprocal *relationship* … ought to teach us about living our lives in relation to one another and our surroundings…" Coulthard, *Red Skin, White Masks*, 60.
[82] Simpson, *As We Have Always Done*, 49.
[83] Simpson transliterates the word into Latin script differently than by Dillon. Simpson, *As We Have Always Done*, 17.

"we don't actually want an audience; we just want to make syrup in my backyard without it being a goddamn ordeal." So instead, they carefully craft a letter saying that they *will* be collecting sap. The letter is polite and free of errors ("everyone knows white people hate typos"), but it does not ask for permission, recognition, or assistance.[84] The collective is engaging with the sugar maples *as they have always done*. The flyers produced by Strong's Biidaaban are identical to the ones in "Plight." With an image of a thunderbird at the top, the flyer reads: "We are collecting sap from this Maple Tree next year from March 21-23. We will be by to collect it once a day, and we will pick up the bucket lid and spigot on March 23rd. Thank you for your support in our urban sugar making adventure. FWP Collective." As Biidaaban approaches the first house, the suburban environment comes alive to stop them. Something moves, concealed by the darkness and seemingly stalking Biidaaban. A porchlight shines brightly on Biidaaban like a prison searchlight tracking an escaped inmate. Biidaaban freezes momentarily and sprinklers emerge from what otherwise looks like artificial grass, turning mechanically like Gatling guns, ready to spray this intruder. Biidaaban is treated as both a fugitive from the colonial subjectifying apparatus and an intruder on their own land. Even the grass turns against Biidaaban. In this suburban ecology, botanical life is stripped of relation and turned into infrastructure, weaponized against the very practices that once sustained it. As Biidaaban runs up the stairs to the front door, the house and its foundation, but notably not the Earth, begin to tremble, and a serpentine garden hose gives chase after

[84] Simpson, "Plight," 6.

Biidaaban affixes the flyer to the door. Like the characters in "Plight," Biidaaban is self-affirmatively participating in empowering cultural practices—telling her neighbors, not asking them.

The film doesn't represent any of the neighborhood's human residents. The smug farmers' market shoppers Simpson describes in "Plight" are nowhere to be seen, but they are surely asleep inside the trembling homes, unaware of the struggle unfolding outside—complicit but oblivious. Maybe they would be sympathetic to Biidaaban, but that is beside the point. Alutiiq artist and scholar Tanya Lukin Linklater makes a similar observation about *Savage*, a 2009 short film by Lisa Jackson visualizing a young girl's experience being taken from her family and placed in the residential school system. Of this film, Lukin Linklater writes, "We never see the face of the perpetrators responsible for her removal from her family, her community, and her homelands. The individuals who perpetrate these acts in Jackson's short video are not as important as the structures that the individuals enact and embody, and which the children come to embody."[85] The treatment of the amorphous or distributed antagonists in Strong and Jackson's films resonates with Coulthard's assertion that the "totalizing character of state power," along with capitalism, patriarchy, and white supremacy, "interact with one another to form the constellation of power relations that sustain colonial patterns of behavior, structures,

[85] Tanya Lukin Linklater, "Desirous Kinds of Indigenous Futurity: On the Possibilities of Memorialization," in *Desire Change: Contemporary Feminist Art in Canada*, ed. Heather Davis (Montreal: McGill-Queen's University Press, 2017), 154.

and relationships."[86] Such a relationship is the paternalistic, recognition-based one described by Simpson's narrator, and Strong illustrates this totalizing nature with the living, breathing, and hostile suburbia. For both Strong and Simpson, the colonial structure seems more powerful, more important, than the fickle individuals who help sustain it, often blindly or unwittingly.

Living Alongside Ancestors

As Biidaaban flees the hostile house, a tree root, glowing with Sabe's presence, aids them in their escape (fig. 2.5), and they continue to mark trees and leave flyers with determination and speed. Anthropomorphic lights still monitor Biidaaban, but the protagonist has prevailed for now and suburbia is quieted. Time passes; fall turns to spring; and then viewers see Biidaaban's home once again. Inside, a corkboard is covered with notes, newspaper clippings, and string connecting items, like an amateur detective trying to uncover a conspiracy. The camera pans across the board, revealing its many contents, including an embroidered hoop that reads "In the old days it was important to take Care," a sticky note reading "–Maples –Trees –Ancestors," a newspaper clipping about the near-extinction of the last herd of Caribou in the lower 48 U.S. states, and several notes with Anishinaabemowin words for "caribou," "it is red," and "tap," among others.

[86] Coulthard, *Red Skin, White Masks*, 14.



FIGURE 2.5. Still from *Biidaaban (The Dawn Comes)*, directed by Amanda Strong, 2018. Reproduced with permission from Spotted Fawn Productions.

Sabe appears outside Biidaaban's house and texts them: "Ziigwan! Ziigwan :D It's Time ;) Ziisbaakdaaboo…" [Spring! Spring :D It's Time ;) Sap…]. The two set out at night once again, this time to tap the trees for collection. But in town they find glowing red X marks across the stenciled thunderbirds and red safety fencing wrapped around the tree trunks. The previously pacified suburbia awakens and notices Biidaaban but does not stop them from tapping the trees. Some period of time elapses, and the two are back at Biidaaban's house. This time Sabe sleeps and Biidaaban must wake them with a text reading, "tea is getting cold. c'mon Get up! ;P we have important work to do. iskigamizigan iskigamizigan iskigamizigan…" *Iskigamizigan* is translated as "sugar bush," referring to a grove of sugar maples and indicating that it is time to collect their sap. As they successfully collect the sap, however, the fencing around one of the trees comes alive and knocks the collecting

bucket from the tree. As Biidaaban investigates, the fencing ensnares them and the surrounding houses dislodge themselves from their foundations and encircle Biidaaban. This is the violence of the settler state animated and unleashed to instinctively protect private property and prevent Biidaaban from engaging their cultural practices—to prevent them from being. Ghost Caribou and Ghost Wolf, however, emerge to fend off the fencing, along with Sabe, eventually freeing Biidaaban and rendering the vinyl fence inanimate again. The houses return to their original locations, defeated by this intergenerational coalition.

Relieved, and with this months-long (but also centuries-long) struggle finally over (for now), Biidaaban places their hand on the snowy ground, recalling Ghost Caribou nuzzling the ground in the film's opening. The camera pedestals down through the ground again—roots and mycelia glowing—but it goes further, to "another side" of the Earth. The camera reveals an upside-down world, where three Indigenous women in traditional attire hang from the ground, with their arms, legs, and braids dangling down toward the sky. The camera then rotates and the world sets itself right-side up. The women's limbs and hair fall to the ground, and they seem to breathe with relief and then stand up. The camera zooms out and viewers see a two-sided world (fig. 2.6). At the top are the three women in an autumnal wooded landscape; at the bottom is the Ontario suburb. Biidaaban and Sabe stand in the core of this world, flanked on both sides by Ghost Caribou and Ghost Wolf.



FIGURE 2.6. Still from *Biidaaban (The Dawn Comes)*, directed by Amanda Strong, 2018. Reproduced with permission from Spotted Fawn Productions.

This ending, along with the intermittent-yet-continued presence of Ghost Caribou, Ghost Wolf, and Sabe, gesture toward "intergenerational time," a concept that seems integral to Dillon's Native slipstream and that Whyte identifies as an essential component of much Indigenous science fiction. Those who live with intergenerational time, Whyte writes, "consider ourselves as living alongside future and past relatives simultaneously as we walk through life." Such a worldview, he continues, results in the questions "How do we return the gifts from our ancestors?" and "How do we become a good ancestor ourselves?"[87] The non-human protagonists in *Biidaaban* represent, if not Biidaaban's ancestors, ancestral kin and elders who teach and guide Biidaaban, like the sugar maples of the Menominee worldview

[87] Whyte, "Indigenous Science (Fiction)," 228–29.

described by Whyte. Strong has described Sabe as an ancient being who can "shapeshift and transcend time" and Ghost Caribou and Ghost Wolf as spirits of animals that have been removed from their land in southern Ontario.[88] These beings, along with Biidaaban, are the people of this land. And in the action of the film, they have come together with a common cause, which is to support Biidaaban's own "embodied process of freedom," to use Simpson's words. The bigger picture, however, is that Biidaaban is answering the question, posed by Whyte, about how one acts as a good ancestor. The ending illustrates a restoration, if only partial, of the past by Biidaaban's actions. The Indigenous women were trapped and flailing, but by *living* their cultural practices, Biidaaban returned their ancestors' gifts. By these actions, Biidaaban also does their part to be a good ancestor themselves, as does Strong through her own storytelling practice. In these ways, *Biidaaban* is a clear and beautiful example of what Whyte calls "living Indigenous (science) fiction," which he defines as "a philosophical place of intergenerational dialogue that unfolds through finding and empowering those protagonists who can inspire and guide us through the ancestral dystopias we continue to endure."[89]

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[88] Jeff Hume, "6 Astonishing Moments from Amanda Strong's Stop-Motion Short Film *Biidaaban*," CBC Arts, June 25, 2019, https://www.cbc.ca/arts/6-astonishing-moments-from-amanda-strong-s-stop-motion-short-film-biidaaban-1.5188094; Leah Collins, "'Live Action Could Never Have Created These Worlds': Amanda Strong on Her Latest Film, Biidaaban," CBC Arts. June 15, 2019, https://www.cbc.ca/arts/live-action-could-never-have-created-these-worlds-amanda-strong-on-her-latest-film-biidaaban-1.4821934.

[89] Whyte, "Indigenous Science (Fiction)," 233.

Rather than envisioning a dramatic rupture from the present, *Biidaaban* offers a vision of cultural continuance as the foundation of resistance. Grounded in the intertwined worlds of plant life, ancestral presence, and nonlinear time, Strong's film models a refusal of colonial and capitalist temporality not through spectacle through the steady labor of relational care. As Biidaaban walks alongside sugar maples, and as Strong shapes the animated frame by hand, both character and filmmaker participate in a multispecies act of resurgence—one that renders visible the vibrant entanglements so often obscured by dominant narratives. *Biidaaban* is not simply symbolic; it is action. The word *biidaaban*, after all, is an intransitive verb that means "the dawn comes." But the film is not a prediction, it is a declaration: the dawn comes. This work does not stand alone. In what follows, I turn to the animated performances of Miwa Matreyek, whose visual poetics of ecological grief, human vulnerability, and planetary kinship offer another way of imagining multispecies futures—this time through the ephemeral convergence of shadow, light, and the botanical imagination.

The Body in Animation

If Strong's *Biidaaban* enacts a grounded form of Indigenous futurism—rooted in plant-human relationships, ritual labor, and cultural continuance—Miwa Matreyek's animated performance work shifts the scale of multispecies storytelling to

the planetary.[90] Where sap harvesting and puppet-building emphasize intimate, land-based collaboration, Matreyek's layered projections stage entanglement on a vast ecological and temporal canvas. Yet both artists refuse the visual and narrative logics of mastery and containment. Both position their own bodies in visual relation to nonhuman forces—Strong through the materiality of stop-motion and ancestral puppetry, Matreyek through the fragile silhouette that moves across, and within, her animated worlds. And both foreground the agency of plant life as more than scenery: the sugar maple that pulses with ancestral energy, and the monstrous globe that blooms and burns, each insist on a botanical presence as a structuring force. Through very different visual vocabularies, Strong and Matreyek each invite us to imagine world-making as a collaborative, more-than-human act.

Matreyek is an animator and performer, currently based in Vancouver, British Columbia, teaching theatre production and design at Simon Fraser University. Matreyek was previously based in Los Angeles, and she earned her MFA in Experimental Animation and Integrated Media from the California Institute of the Arts. Though her work is screened in pre-recorded formats, it is often shown live as unique experiences, sometimes accompanied by artist talks or workshops, lending an air of intimacy to the films and their spectatorship.

Infinitely Yours (2020) is a multimedia performance that grapples with climate catastrophe and its human causes. In live performances, Matreyek's animations are

[90] Matreyek grew up in both Japan, where she was born, and California. She was formerly based in Los Angeles but now lives and teaches in Vancouver.

projected, from the front and from the back, onto two screens. The artist inserts herself between the two screens, creating a shadow of her body that inhabits and interacts with the world of the animation. Matreyek's silhouette engages with the animated world in ways that are both violent and caring, creating a visual metaphor for human-nonhuman relationships. *Infinitely Yours* premiered at the Sundance Film Festival in early 2020 and has since been performed or screened at film and arts festivals around the globe. This chapter is based on a live version of the piece performed on June 29, 2023, at the Exploratorium, a science and technology museum in San Francisco, and on a documentation video recorded in August 2020. In the 2020 version, Matreyek is visibly pregnant.

Halfway through *Infinitely Yours*, at the start of a second act, we see an image that is reminiscent of the two-sided world at the end of *Biidaaban* (fig. 2.7). A globe-like object, in cross-section, floats against a celestial background. The outer ring consists of tall grasses and flowering plants. There is a thin black-and-white mantle-like layer, perhaps representing soil and the root structures of the plants. The bulk of the globe—the core, so to speak—is rocky and earthen. The globe pulses and grows to a percussive and chanted score by composer Morgan Sorne. As the scene progresses, the white silhouette of a rhizomatic form grows in the globe's core. A silhouette of Matreyek herself begins to flicker on the screen.

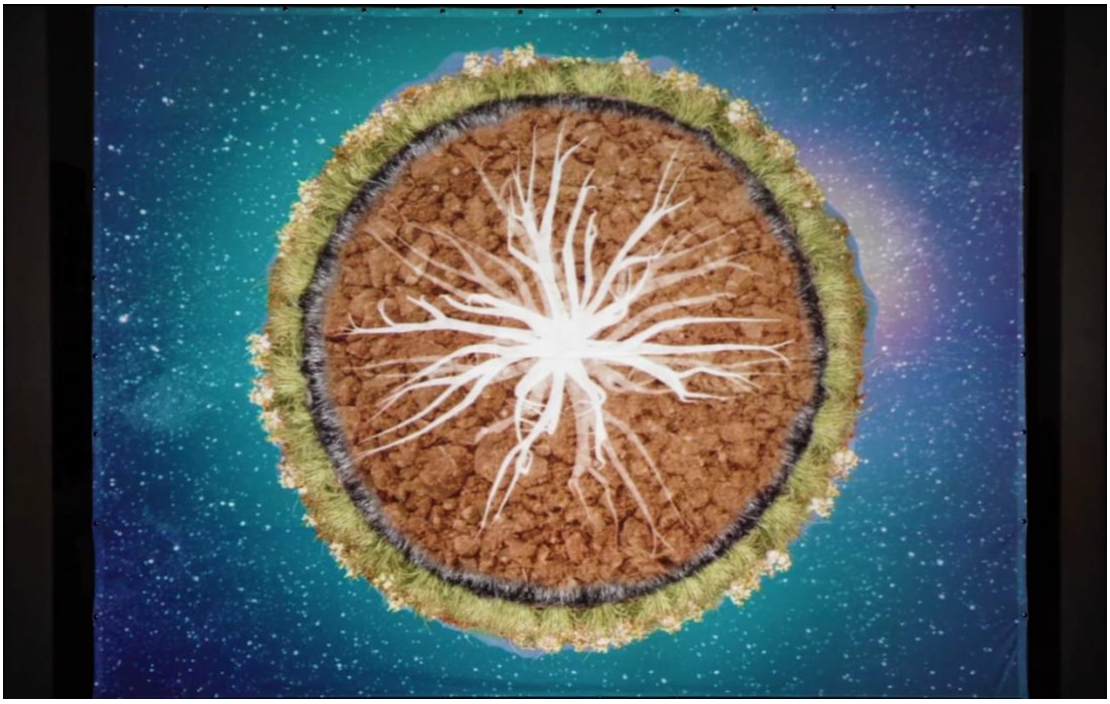

FIGURE 2.7. Still from *Infinitely Yours*, directed and performed by Miwa Matreyek, 2020. Reproduced with permission from Miwa Matreyek.

As Matreyek's silhouette appears and disappears from the screen, the globe continues to grow, and trees spout and shoot up from the grasslands. An infant, seemingly grasped by the silhouette, appears on the screen. Matreyek's animations are generally made through photo and video collages. In this case, the infant is not in silhouette but is a video of a wriggling child making jerky movements. Here we see Matreyek's illusion of interaction with the animated world at its best—the silhouette seems to actually hold the child in three-dimensional space. Suzanne Buchan, a scholar of animation, writes that Matreyek's process in an earlier film, *Dreaming of Lucid Living* (2007), creates "an illusion of her occupying projected animated interiors and urban architecture and engaging with real forms (a chair, curtains, a milk

carton behind the screen that appear as silhouettes) and animated objects (a table, an oven mitt, a microscope, a cat, an egg in a cup)."[91]

Though not common in contemporary commercial animation, Matreyek's approach falls within a century-long tradition in animation. In 1923, five years before the introduction of Steamboat Willie, Walt Disney's Laugh-O-Gram Studio, the predecessor to his namesake studio, produced *Alice's Wonderland*, a twelve-minute film in which a filmed actor, played by five-year-old Virginia Davis inhabited a kooky animated world of talking dogs and dancing rabbits. In 1914, the American animator Winsor McCay premiered his animated film *Gertie the Dinosaur* as part of a vaudeville act in which he would interact with the animation to a live audience. For example, McCay would whip at the screen, and the animated dinosaur would, in turn, respond by performing tricks. McCay claimed that when the dinosaur emerged on the screen, the audience thought it was a papier-mâché construction with men inside.[92] Whether or not this accurately portrays the audiences' experience, it nonetheless speaks to the power of the illusion of interaction McCay likely created.

Ghosts, Monsters, and the Enlightenment

After the infant appears in *Infinitely Yours*, the pace of change in the scene intensifies. As Matreyek handles the baby, a towering waterfall appears somewhere

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[91] Suzanne Buchan, "The Animated Female Body, Feminism(s) and 'Mushi'," *Experimental and Expanded Animation: New Perspectives and Practices*, eds. Vicky Smith and Nicky Hamlyn (Cham, Switzerland: Springer International, 2018), 222.
[92] John Canemaker, "Winsor McCay," *The American Animated Cartoon: A Critical Anthology*, eds. Danny Peary and Gerald Peary (New York: E.P. Dutton, 1980), 18.

on the globe, and a verdant and lively assemblage has grown at the base of the planet, which now occupies most of the screen. This organic mise-en-scène is a tangled mass of grasses, moss, fungi, and butterflies. This scene has apparent themes of birth, regeneration, and vitality. As the pregnant woman appears and the child emerges, the plant life around them grows, suggesting an interdependence between the domains of life. But this is not an image of an uncritical, arcadian one-with-nature perspective. As Matreyek dances in the core of the earth, we see its surface change and change. Farms, cattle ranches, polluting factories, oil derricks, megalopolises, and post-apocalyptic ruins all take turns dominating the earth's surface (fig. 2.8). If the two-sided world at the end of *Biidaaban* represented assured continuity or a sense of balance, Matreyek's floating world has a placid start that quickly devolves into destruction and chaos.



FIGURE 2.8. Still from *Infinitely Yours*, directed and performed by Miwa Matreyek, 2020. Reproduced with permission from Miwa Matreyek.

Referring to *Dreaming of Lucid Living*, Buchan writes that "Matreyek articulates ambivalence of female reproduction with a musical soundtrack, specifically during a segment of a female voice (Anna Oxygen) singing about a 'biological crush' that takes the audience through contemporary postfeminist conundrums of motherhood, biology and gender."[93] This theme re-emerges in *Infinitely Yours* as well. In a scene in which the surface of the Earth is covered in skyscrapers and missiles, and the silhouette is dancing amidst a pile of garbage, a lyric from the score states, "take your place and eat your young." Matreyek mentions in an interview that when the piece premiered in early 2020, she was "grappling with the world that we live in and if it's a good idea to bring in a new life into this world."[94]

But here, Matreyek's silhouette is still presumably pregnant, and the artist was truly pregnant when she created the documentation video. The caring embrace of the infant returns even after these ominous lyrics. Though there may be ambivalence toward reproduction, there is tenderness and care. Moreover, for me, the prevailing themes of the piece are continuity, hope, and birth and rebirth. Though very different films with very different narratives (insofar as *Infinitely Yours* even has one), Matreyek's film shares these thematic concerns with *Biidaaban*. These both function as beacons of hope in dangerous and precarious times. Matreyek, however, is ambivalent about the hopefulness of the piece. "I think there's some hope in the

[93] Buchan, "The Animated Female Body," 223.
[94] Miwa Matreyek, interview with the author, December 9, 2025.

piece," she explains, "but I think it's like more 'not hope.'"[95] In a scene after many images of environmental violence, Matreyek holds the baby again and plants begin to grow out of them. She describes this as "kind of a hopeful scene, a hopeful transition," but she oscillates with something more apocalyptic: it is also an image of the idea that "nature will come back when humanity's gone."[96] Matreyek thinks of her performances as a collective catharsis or exorcism.[97] Perhaps the impulse towards catharsis represents a desire for hope.

In their 2017 anthology *Arts of Living on a Damaged Planet*, scholars and editors Anna Tsing, Heather Swanson, Elaine Gan, and Nils Bubandt divide the book's essay into two broad categories: ghosts and monsters. They define "ghosts" as "the vestiges and signs of past ways of life still charged in the present."[98] *Biidaaban* is perhaps a film of ghosts—not just the apparitions of Ghost Caribou and Ghost Wolf, but also the continued presence of ancestors, lifeways, and practices. *Infinitely Yours*, however, shows us something of the monstrous, which the editors argue are "useful figures with which to think the Anthropocene" because they "point us toward life's symbiotic entanglement across boundaries."[99] Though the authors don't provide a concise definition of a monster, they identify the messy, complicated entanglement

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[95] Matreyek, interview.
[96] Matreyek, interview.
[97] Matreyek, interview.
[98] Elaine Gan et al., "Haunted Landscapes of the Anthropocene," *Arts of Living on a Damaged Planet*, eds. Anna Tsing et al. (Minneapolis: Minnesota University Press, 2017), G1.
[99] Heather Swanson et al., "Bodies Tumbled into Bodies," *Arts of Living on a Damaged Planet*, eds. Anna Tsing et al. (Minneapolis: Minnesota University Press, 2017), M2.

of different beings as monstrous. These scholars argue that *the* condition of the Anthropocene is "suffering from the ills of another species."[100] Symbiosis, they argue, is a "near-requirement for life," but the consequence of this is that "symbioses are vulnerable; the fate of one species can change the whole ecosystem."[101] Monsters are not always antagonists; they can be wonderful or threatening. Humans, then, are just as monstrous as the magnificent, fishery-destroying jellyfish the essay opens with.

Tsing et al. describe monsters as a threat to Enlightenment Europe, having been banished for their boundary-breaking and irrational nature. But if the climate crisis and the crisis of humanism that I have identified elsewhere suffer from overly strict, artificial boundaries, then the figure of the monster may help us better understand, and look beyond, the modernist-humanist condition. "Monsters," the authors conclude in the section introduction, "are bodies tumbled into bodies; the art of telling monstrosity requires stories tumbled into stories."[102] *Infinitely Yours* captures the complex, multivalent, and monstrous nature of humanity, insisting on the beauty of the human experience and its interspecies interdependence without shying away from critique. That is, Matreyek's critique of human monstrosity refuses a kind of misanthropic anti-humanity that is increasingly prevalent in some environmental movements.

[100] Swanson et al., "Bodies Tumbled into Bodies," M4.
[101] Swanson et al., "Bodies Tumbled into Bodies," M5.
[102] Swanson et al., "Bodies Tumbled into Bodies," M10.

The first act of the *Infinitely Yours* enacts this tumbling of bodies and stories to an almost literal degree. The film begins with a shot of a rotating surface on which stands several paper cutouts of trees. The trees are in shadow, and the scene recalls both the rotating zoetropes of pre-cinema and the shadow play tradition of Indonesia and Southeast Asia. The camera zooms in on the forest, and the scene becomes more animate with galloping animals and birds flying across the sky. The scene turns into one of chaos as a forest fire is revealed as the source of the fleeing animals. Matreyek dances among the flames. This is followed by a cascade of scenes of industrial, commercial, and urban life.

Through some of these scenes, Matreyek's silhouette stumbles along, a victim of the chaotic events that are unfolding. In others, however, her giant silhouette is an agent of destruction, such as by raising refineries and transmission lines with the motion of her hands, like a conductor-cum-magician. In one striking scene, the silhouette lumbers through a forest, knocking down trees of equal height as birds flock around her in the sky (fig 2.9). Here the bodies tumble into one another—and across these scenes, stories tumble into one another. The first act is a kaleidoscopic barrage of scenes and stories. A single narrative is elusive, and it is difficult, if not impossible, to pin down the character of the silhouette.



FIGURE 2.9. Still from *Infinitely Yours*, directed and performed by Miwa Matreyek, 2020. Reproduced with permission from Miwa Matreyek.

Embodying the Monstrous

There is a peculiar, almost contradictory, nature to Matreyek's projections. By placing herself between two screens, she flattens her body, obscures it in shadow, and anonymizes herself. Yet, at the same time, she creates an illusion of depth and re-volumizes her body by enmeshing herself between the imagery of the two screens. She creates presence despite, and even through, absence. The previous chapter argued that botanical-multispecies visuality was attentive to the embodied nature of media spectatorship. *Infinitely Yours* recalls art historian Kate Mondloch's insistence that

media installation art is simultaneously material and immaterial.[103] Mondloch's writing on the performative screen helps us understand how Matreyek's shadow-body disrupts the possessive, Western spectator. Her visual strategies also resonate with Donna Haraway's call for "situated knowledges"—forms of vision that reject the disembodied "god-trick" discussed in the previous chapter in favor of partial, embodied, and accountable perspectives. Matreyek does not pretend to master the globe she interacts with; instead, she becomes partially visible within it, subject to its violences and transformations. Her silhouetted body is not above the planetary scene, but folded into its entangled, often botanical logic—an epistemic position more akin to rootedness than mastery.

And while the audience at a Matreyek performance is consciously aware that the artist is present, they may experience an oscillation between the illusion of a flat, integrated media image, which appears to the audience as all occurring on a single screen, and punctuated moments of corporeality, as when Matreyek "holds" the naked, squirming infant. If one feels some personal connection to the artist, say through her on-stage introduction, they may be further drawn into the world of the animation, much like McCay's vaudeville audiences may have felt. Mondloch writes that "direct bodily experience echoes the proposition shared by phenomenology and feminist philosophy, which holds that subjects primarily learn to trust and feel intimacy via human touch and in the physical presence of other bodies."[104] She also

[103] Kate Mondloch, *Screens: Viewing Media Installation Art* (Minneapolis: University of Minnesota Press, 2010), 17.
[104] Mondloch, *Screens*, 91.

calls on new media critics and practitioners to confront "the ways in which new viewing technologies can generate intensely destabilizing spatial dynamics for viewing subjects."[105] In both Matreyek and McCay, we can see how technologically simple, if clever, media technology can produce similar spatial disruptions. In fact, Matreyek says of her practice, "The point of having a live body in that space is that I'm trying to make all these moments of climate crisis both recognizable on a personal level and of course metaphorical and larger than life… I want them to feel like first-person experiences."[106] Matreyek, then, is trying to foster something akin to the embodied spectatorship discussed in Chapter 1 and Rancière's emancipated spectator discussed earlier in this chapter.

Buchan writes that, while Matreyek is embedded in the animated world, this is nonetheless "a world subordinate to the live performer."[107] This is true in the most literal sense, as Matreyek is the creator of these images and their world. But Buchan also adds that "the timing, proportions, movement and metamorphoses of these spaces and objects are designed to be a choreography with her living body during projection."[108] That is to say, the intention of the work is to consciously insert Matreyek's body as an activating, if not also controlling, force within the animated world. Matreyek says as much, acknowledging that "with my work, it's very much about the body being a part of the animation and cinematic experience. Animators are

[105] Mondloch, *Screens*, 92.
[106] Matreyek, interview.
[107] Buchan, "The Animated Female Body," 222.
[108] Buchan, "The Animated Female Body," 222.

control freaks. We can control every frame, every pixel—and my solo work is sort of an extension of that, where every thing is very choreographed and precise."[109]

How do we make sense of this impulse for control, and its visualization in the work, in light of the obvious critique of the impulse to control in *Infinitely Yours*? If animators are control freaks, is the medium unsuitable for interrogating control? Along these lines, in their introduction to the monstrous half of *Arts of Living on a Damaged Planet*, the editors ask, "How can we repurpose the tools of modernity against the terrors of Progress to make visible the other worlds it has ignored and damaged?"[110] Wells claims that McCay, who is one of the first animators, "properly [recognized] animation as a Modernist practice."[111] Matreyek, too, is using the tools of modernism to produce her work. But whereas McCay's ringmaster act is control without critique, *Infinitely Yours* is a critique that does not deny the artist's (and the audience's) complicity in the destruction observed. Matreyek's anarchic imagery and unsettled narrative in *Infinitely Yours* decidedly does not represent "the straight and narrow path of time" that Skylar identifies with later *Silly Symphony* films. Matreyek grapples with the monster of humanity, but also the monster of modernity: her practice is indebted to modernity while homing in on the ills of modernity.

Though a superficial reading of *Infinitely Yours* may see it simply as a critique of humanity, Matreyek does not stray into the territory of misanthropy. This

[109] Quoted in Buchan, "The Animated Female Body," 224.
[110] Swanson et al., "Bodies Tumbled into Bodies," M7.
[111] Wells, *Animation and America*, 30.

misanthropy in some corners of contemporary ecological movements. In the early days of COVID-19 lockdowns, for example, a user on Twitter wrote:

> Wow… Earth is recovering
>
> - Air pollution is slowing down
> - Water pollution is clearing up
> - Natural wildlife returning home
>
> Coronavirus is Earth's vaccine
>
> We're the virus[112]

This perspective was critiqued and mocked online, but the phrase "we are the virus" also circulated earnestly. The phrase implies that because nature appeared to be "healing" while human activity was being curtailed, humanity as a whole was a blemish or malignant presence and that the deaths caused by the virus were a cure.[113] At the time, the Yale School of Public Health estimated that as of March 23, 2020, 6 days after the Twitter post, there were more than 15,000 deaths globally from the virus.[114] As of May 15, 2025, the World Health Organization estimates that more than

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[112] Sierra Garcia, "'We're the Virus': The Pandemic is Bringing out Environmentalism's Dark Side," *Grist*, March 30, 2020, https://grist.org/climate/were-the-virus-the-pandemic-is-bringing-out-environmentalisms-dark-side/.

[113] Many of these claims of nature healing were overstated or false. Jansen Baier, "Studies Debunk 'Nature is Healing' Narrative from 2020 Lockdowns," *Mongabay*, September 1, 2021, https://news.mongabay.com/2021/09/studies-debunk-nature-is-healing-narrative-from-2020-lockdowns/.

[114] Jeannette Jiang, Emily Peterson, and Robert Heimer, "COVID-19 Updated Data & Developments - March 23, 2020," Yale School of Public Health, March 23, 2020, https://ysph.yale.edu/news-article/covid-19-updated-data-and-developments---march-23-2020/.

7 million people have died from the disease.[115] This kind of trivializing, if not glorifying, of human suffering has precedence in the contemporary environmental movement. Some in the deep ecology movement, which seeks to champion the inherent value of the nonhuman, veer into a pernicious and dualistic misanthropy that pits the human against the nonhuman. For example, Earth First! co-founder Dave Foreman wrote that nature should be allowed to take its course in the Ethiopian famine of the 1980s; and in 1987, environmental activist Chris Manes wrote, under the pseudonym Miss Ann Thropy, that the AIDS epidemic was a "necessary solution" to high population.[116] This perspective is often attributed to ecofascism. Philosopher Michael E. Zimmerman and literary scholar Teresa A. Toulouse write that "most literally, ecofascism (ecological fascism) names a collectivist political regime that uses authoritarian measures to achieve its major goal, protecting nature."[117] Acknowledging that no such regime has ever existed, Zimmerman and Toulouse explain that the term can be used "to disparage the view, shared by many environmentalists and ecological scientists, that individual organisms are less important than species and the biospheric whole."[118] While this perspective can come

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[115] "WHO COVID-19 Dashboard," World Health Organization, accessed May 15, 2025, https://data.who.int/dashboards/covid19/deaths?n=o/.
[116] Jeffrey Shantz, "Judi Bari and 'The Feminization of Earth First!': The Convergence of Class, Gender and Radical Environmentalism," *Feminist Review* 70 (2002): 108, https://www.jstor.org/stable/1395973
[117] Michael E. Zimmerman and Teresa A. Toulouse, "Ecofascism," *Keywords for Environmental Studies*, eds. Joni Adamson, William A. Gleason, and David N. Pellow (NYU Press, 2016), 64, https://www.jstor.org/stable/j.ctt15zc5kw.25.
[118] Zimmerman and Toulouse, "Ecofascism," 65–66.

out in explicitly political contexts, as with activists Foreman and Manes, the COVID-19 pandemic shows how it can be propagated with less strategic intention.

Despite the imagery of a person (and of human society) causing so much destruction in *Infinitely Yours*, Matreyek resists proposing a dualism between the human and the nonhuman. Sam Moore and Alex Roberts write in their book *The Rise of Ecofascism: Climate Change and the Far Right* (2022) that "humans have always been an environment-making species. By 3,000 years ago, our impact was worldwide."[119] For this reason, they argue that rather than calling the current epoch the Anthropocene, we should call it the Capitalocene, which makes a distinction between placing the cause of the environmental crisis at all human hands versus "the specific economic system of capitalism."[120] Environmental historian Jason W. Moore, who has done much to popularize the term *Capitalocene*, writes that the Anthropocene concept relies on a Human/Nature dualism that "obscures our vistas of power, production and profit in the web of life. It prevents us from seeing the accumulation of capital as a powerful web of interspecies dependencies; it prevents us from seeing how those interdependencies are not only shaped by capital, but also shape it."[121] To put it more explicitly, he explains, "It's a trick as old as modernity—the rich and powerful create problems for all of us, then tell us we're all to blame."[122]

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[119] Sam Moore and Alex Roberts, *The Rise of Ecofascism: Climate Change and the Far Right* (Cambridge, UK: Polity Press, 2022), 14.
[120] Moore and Roberts, *The Rise of Ecofascism*, 15.
[121] Jason W. Moore, "The Capitalocene, Part I: On the Nature and Origins of Our Ecological Crisis" *The Journal of Peasant Studies* 44, no. 3 (2017): 598, https://doi.org/10.1080/03066150.2016.1235036.
[122] Moore, "The Capitalocene, Part I," 599.

Conclusion

In *Infinitely Yours*, Matreyek's critique seems to be aimed more at something akin to the Capitalocene than the Anthropocene. This is visible in those scenes that show her body not just tumbling into but growing alongside and merging with the plants of the earth. Despite the destructive nature of her silhouette, we see a rejection of the human-versus-nonhuman dualism. Matreyek's film *Solastalgia*, which she created in 2020 during the COVID-19 pandemic, makes this nondualist approach even more clear. Under three minutes long, the film is more autobiographical and essayistic than *Infinitely Yours*, exploring the concept of *solastalgia*, which was coined by environmental philosopher Glenn Albrecht. As Matreyek defines it in the film, solastalgia is the "emotional and existential distress caused by environmental change; the sense of powerlessness you feel as the environment around you is transformed by climate change or human impact." Accompanied by a tranquil, almost imperceptible instrumental score, the imagery is a collage of plant life, both indoors and outdoors. Matreyek's face and, at times, hands, appear on the screen. They are not in silhouette in *Solastalgia*; we can see the color of the artist's hair, her eyes, facial features, and, when she is not wearing a surgical mask, her mouth. But the images of her body are superimposed with transparent images of plants wavering in the wind. As Matreyek speaks about homecoming, belonging, and safety—all diminished for her during lockdown—the film makes clear that the nonhuman is not

simply a refuge or a place of comfort but essential components of her self—or her self-in-relationship.

Together, Amanda Strong and Miwa Matreyek offer contrasting but complementary visions of animation as a multispecies, world-making practice. Where Strong's *Biidaaban* roots resistance in land-based ritual and ancestral time, Matreyek's *Infinitely Yours* stages a planetary drama of ecological collapse and speculative regeneration. Both artists center the body—material, partial, and vulnerable—not as a site of mastery, but as a participant in ongoing entanglements with plant life, land, and more-than-human forces. Against the anthropocentric containment and narrative legibility that came to define early Disney films—where plant life was gradually reduced to sentimentalized scenery or ornamental character—Strong and Matreyek reanimate the botanical as epistemic agent, kin, and collaborator. If the forest in *Flowers and Trees* could sing and dance only by becoming more like humans, in *Biidaaban* and *Infinitely Yours*, it pulses with its own logics of time, relation, and resistance. These works reclaim animation from its disciplining history and reorient it toward the ethical and imaginative labor of making new, entangled worlds.

Chapter 3:

Virtual Plants and the Question of Authentic Nature

This chapter examines the cultural, philosophical, and ecological stakes of virtual nature by engaging ongoing debates in the humanities over authenticity, artificiality, and the nature–culture divide. In this chapter, I use the term "virtual nature" to refer to experiences that represent or replicate the non-human world in immersive digital environments. As virtual environments become increasingly immersive and affectively powerful, questions arise about whether these mediated encounters with "nature" can offer anything more than simulation—whether they might foster meaningful, embodied relationships with the nonhuman world, or whether they sever us further from it. Drawing from environmental humanities, feminist science and technology studies, and critical media theory, I argue that virtual nature is not inherently disembodied or inauthentic; rather, its value depends on the kinds of relationships it enables and the worlds it helps make possible.

To frame these questions, I briefly consider two fictional interstellar voyages—from the poem and movie *Aniara* and Ursula K. Le Guin's 2002 novella "Paradises Lost"—that dramatize the longing for a lost or never-known natural world. In these narratives, virtual or controlled environments initially serve as tools of comfort or containment, but their limitations become clear as characters struggle to form durable connections to a world. These stories help illuminate the stakes of our own emerging virtual ecosystems. I then turn to Lisa Jackson's *Biidaaban: First Light* (2018), a room-scale virtual reality (VR) experience that envisions a future

Toronto transformed by Indigenous resurgence and botanical reclamation. Unlike escapist simulations, *Biidaaban* invites a mode of relational immersion rooted in care, continuity, and embodied response. Through this work, I explore how virtual nature, when grounded in relational ethics, can become not a retreat from the real but a tool for reimagining it. Building on notions of embodied spectatorship and embodied artistic practices of the previous chapters, this chapter probes and problematizes the notion of disembodiment in order to understand how the virtual and foster relationships with the botanical.

Lost in Space

Aniara, both the 1956 epic poem by Harry Martinson and the 2018 film directed by Pella Kågerman and Hugo Lilja, illustrates the potential power of virtual nature as well as, to horrifying effect, its limitations. The starship *Aniara* is a luxury liner, Mars-bound after departing an increasingly inhospitable Earth. Early in the story, an accident puts *Aniara* off-course, and the crew is unable to right the ship. In the poem, the inability to correct course is made apparent early; the film teases the prospect of reaching Mars for both the audience and the passengers. In both cases, the ship is headed away from the solar system. *Aniara* will never return to the solar system, nor will it reach any habitable planet during the lives of those aboard the ship or for thousands of generations to come. *Ainara* is the world for those aboard.

A central feature of the starship is a virtual reality room and artificial intelligence entity called the Mima that allows passengers to experience memories of Earth as it once was. In the poem, the narrator states: “The Mima tuned us in to signs

of life / spread far and wide. / But where, the Mima gives no word of. / We pull in traces, pictures, landscapes, scraps of language" and that "the only world / which we are given is this world in Mima."[1] Here we see that the Mima and the images it offers become a surrogate for the world that is no longer accessible. The film places a particular emphasis on nature in passengers' Mima experiences, including placid lake scenes and lush forests. The film's protagonist is an unnamed "Mimarobe," a technician who manages the Mima and teaches passengers how to interact with it. In the film's first scene with the Mima, the Mimarobe walks along a creek visually framed by a sea of green ferns, mosses, shrubs, and giant butterburs (fig. 3.1). Shown in close-up, she picks berries and eats them before leaving the vision with a sorrowful sigh. The verdant and virtual plants are signifiers of home and life before the unstated apocalypse that is the film's background.



FIGURE 3.1. Still from *Aniara*, directed by Pella Kågerman and Hugo Lilja, 2018.

[1] Harry Martinson, *Aniara: A Review of Man in Time and Space* (Ashland, OR: Story Line Press, 1999), 37, 39.

At first, there is little interest among the passengers in the experience that the Mima offers, but as anxiety sets in and passengers suspect that they are now without a world, their interest grows. Then, with a jarring intertitle, the film abruptly jumps ahead three years. Still lost in space, the passengers and crew of *Aniara* now flock to the Mima. The creature comforts of the luxury ship are no longer sufficient, and a desire for earthier experiences emerges with vigor. The Mima, however, becomes overloaded and begins showing people horrifying memories of Earth. In the film, the Mima begins to speak Swedish (its first use of human language), proclaiming, "My conscience aches for the stones. I've heard them cry their stonely cries, seen the granites white-hot weeping. I've been troubled by their pains. In the name of Things, I want peace." It then destroys itself. Jump ahead to year four: with the Mima destroyed, social order is breaking down; death by suicide is common; and cults begin to emerge, including a sex cult that worships inside the corpse of the Mima. Read in the context of contemporary ecological anxiety, *Aniara* operates as an allegory of a post-natural Earth, where the impossibility of return mirrors our own global precarity. The passengers' desperation for the Mima speaks to their recognition that the "world" is no longer external to them but housed precariously within systems that can fail. *Aniara* is our Earth.

In year six, the Mimarobe creates a device that projects natural images from Earth outside the starship so that passengers have a reprieve from the profound emptiness of space. In year ten, the Mimarobe is awarded an honorary medal for her projection screen, which, the captain says, "helped us remember our origins." But the

projection hardly seems to matter, and the society of *Aniara* is holding on by a thread. A projection is not a memory, much less an immersive engagement with nature. Life on *Aniara* is sad for those who remain. In the film's next chapter, *Aniara* is seen from the outside, floating in space with no interior lights on. It is now year twenty-four, and the small number of passengers left sit in the destroyed Mima room, worshipping, or possibly just mourning, what they will never again have: a world. And then there is one final chapter: It is year 5,981,407, and the *Aniara*, now devoid of any life, bypasses a blue and green planet in the Lyra constellation. One might presume that had the Mima remained intact, the comfort and solace its virtual nature offered passengers would have persisted. But the ineffectiveness of the later projections and the contrast in time scales highlight the limitations of the Mima's virtual nature.

Le Guin's "Paradises Lost" helps us better understand these limitations. The novella shares such a similarity with *Aniara* that Le Guin mentions the poem in the introduction to the anthology in which it was first published. She explains that she wanted to write a "generation-ship story" that was about the middle generations, not those who departed or arrived, but those entirely living out the journey in space.[2] "Paradises Lost" begins in year 141 of the interstellar voyage of the *Discovery* to explore the possibly habitable planet Hsin Ti Chiu, which becomes "Shindychew" after generations of language transformation. The story follows Liu Hsing, a member of the ship's fifth generation, from childhood through adulthood.

[2] Ursula K. Le Guin, "Forward," in *The Birthday of the World and Other Stories* (New York: HarperCollins, 2002), xiii.

The *Discovery* is much like the *Aniara*—self-contained and comfortable—though it was designed for a longer journey and thus holds up well for multiple generations. The *Discovery* is not entirely devoid of non-human life, but it is a sterile place. "Alive in the world are human beings, plants, and bacteria," the narrator explains, continuing:

> And only certain bacteria. No molds, no wild yeasts. No virus (down another order). Nothing that causes disease in human beings or in plants. Nothing but the necessary bacteria, the house-cleaners, the digesters, the makers of dirt—clean dirt. . . No ticks. No malaria. No mosquitoes. No fleas or flies, no roaches or spiders, no weevils or worms. Nothing in the world that has more or less than two legs. Nothing has wings. Nothing sucks blood. Nothing hides in tiny crevices, waves tendrils, scuttles in the shadows, lays eggs, washes its fur, clicks its mandibles, or turns three times before it lies down with its nose on its tail.[3]

In other words, the *Discovery* is a place lacking the variety of life found in a true world. The ship does contain an instrumentalized garden, in which Hsing's father, Liu Yao, works, and maybe this was enough of a substratum on which to build a society for a time. Eventually, as the journey progresses, Bliss, a religious cult, begins to emerge, which tears at the fabric of the nominally atheist *Discovery* society. Unlike in *Aniara*, however, the event that precipitates increased conflict is not the realization that their journey will be longer but instead the discovery that they will reach Shindychew decades earlier than anticipated. Those of the Bliss cult have come to know the *Discovery* as the one true world; they want nothing to do with Shindychew, dismissing "urgent arguments about exhaustibility of supplies, about wear and tear,

[3] Ursula K. Le Guin, "Paradises Lost," in *The Birthday of the World and Other Stories* (New York: HarperCollins, 2002), 250-251.

about accident and entropy."[4] The Bliss cult committed themselves to a future we can only imagine will end like *Aniara*. Hsing, Yao, and a growing group of passengers found the only world they've known stultifying and lonely and decided to make a new society on Shindychew.

The narrator states that to set foot on the surface of the planet for the first time "was to leave comprehension behind, to lose understanding: to go mad. To be translated into a language where no word—ground, air—transgress, affirm—act, do—made sense. A world without words. Without meaning. A universe undefined."[5] This environment proved unimaginably harsh: wind endlessly blew; shoes, which no one had worn for generations, caused pain; bacteria flourished; tents were burned down by unpredictable fires created for warmth; everything was filthy (by *Discovery* standards); and one early colonist returned to the ship before it left for good, "driven into fits of shuddering and screaming by the continual sight and touch of the innumerable tiny crawling and flying creatures on the ground and in the air."[6] If this was a world without language, the colonists soon developed it. "The vocabulary problem was nothing new," the narrator explains: "All your life inside the ship you had known words that had no meaning at all…. Words such as *cloud*, *wind*, *rain*, *weather*…. Words whose reality was imaginary, or virtual. But here, the word that has no meaning, the concept without content, was the word virtual. Here, nothing was

[4] Le Guin, "Paradises Now," 344.
[5] Le Guin, "Paradises Now," 348.
[6] Le Guin, "Paradises Now," 354.

virtual."[7] On Shindychew, the colonists made meaning when they interacted with the world. It was not a life as easy as it had been on the *Discovery*, but it had depth; they flourished.

In the early years of the *Aniara* flight, there was hope of returning to the Solar System. And while the passengers were abandoning Earth, it did not cease to exist, in the same way that an exile might dream of and even return to their home one day. Moreover, passengers planned to join a larger community with shared relationships with these referents and with the possibility of finding or creating analogues in their new world. In this way, the experiences of the Mima still possessed a strong connection to the world of its users. That world still existed out there—both the planet, however damaged, and the larger community-in-exile with whom they shared that world. But these connections begin to break down as the impossibility of returning to the Solar System becomes apparent. The story is reversed on the *Discovery*. The middle generation lacks any meaningful connection to the nature of a terrestrial world, but they find it on Shindychew, even if it is brutal and strange.

At first glance, these stories may seem like indictments of virtual nature. The terrifying world of Shindychew is favorable to the creature comforts of starliners and images of past worlds. But it is the connection to a world—any world—that the passengers of *Aniara* and *Discovery* yearn for. While this connection is meaningful, the Mima is a respite. But once passengers realize they are inescapably lost to the darkness of space, can virtual nature offer hope any longer? Can one even entertain

[7] Le Guin, "Paradises Now," 357.

an unlikely dream of seeing a forest again? Even if the Mima had continued to exist, its experiences would likely only provoke existential crises, as they would be dreadful reminders of loss rather than a source of hope. This, after all, is why the Mima itself. Here, through this great loss, we can see where virtual nature gets its value. So long as there is a connection between virtual nature and ur-nature, the former exists within the complex web of values and relationships that define the latter. If we value the latter, we can't wholly disregard the virtual, all the while we can acknowledge their difference and separability

The experiences of *Aniara* and *Discovery* are, of course, fictional. The stresses of these extreme scenarios, however, illuminate the significance of our relationships with the non-human world, and they are instructional in thinking about how virtual reality can intervene in these relationships. Like the virtual itself, Jackson's *Biidaaban: First Light* offers something both real and fictitious to this discussion. The VR experience exists in our current world—one can don a headset in a museum or VR library, as I did in an office at the PHI Centre in Montreal. *Biidaaban* is also speculative, though, offering a vision for a world not yet experienced. Before entering the world of Jackson's future Toronto, it is necessary to excavate some of the key terms and debates upon which any discussion of virtual nature hinges.

The Virtual and Its Reality

Sociologist Rob Shields writes that "VR is broadly defined as a computer-generated simulation or presentation of an environment in which the user experiences

a sense of phenomenological presence or immersion in the environment."[8] Even though this definition was written in 2003, well before the availability of advanced consumer VR headsets and applications, it holds up to our common understanding of VR. A desktop computer game or a photorealistic computer-generated film, such as Disney's 2019 remake of *The Lion King*, may meet the first part of the definition, but they generally lack the phenomenological immersion one expects from VR. Shields offers a lengthy genealogy of the term *virtual* itself, extending as far back as the Reformation-era debates about the Eucharist and whether it represents the "actually real, material body and blood" of Christ or the "virtually real."[9] Steve Jones, a historian of communication technology, distills this lengthy history, writing that *virtual* means "something that exists in effect but not in fact, something perceived as real;" and from the late 1980s, this has "largely referred to simulation by technological means."[10] The virtual, Jones continues, "is inextricably tied to the discourse of authenticity," an issue of particular concern in discussions of virtual nature.[11] Shield offers a "tetralogy" of the real and the possible, defining the four constituent parts as follows:

- The *virtual* is a "real idealization" such as a memory, dream or an intention.

[8] Rob Shields, *The Virtual* (New York: Routledge, 2003), 54.
[9] Shields, *The Virtual*, 5.
[10] Steve Jones, "Virtual," *New Keywords: A Revised Vocabulary of Culture and Society*, eds. Tony Bennett, Lawrene Grossberg, and Meaghan Morris (Malden, MA: Blackwell Publishing, 2005), 367.
[11] Steve Jones, "Virtual," 368.

- The *concrete* is an "actual real" such as a taken-for-granted thing, an actualized idea and anything that embodies memories. It is the event, our everyday "now."
- The *abstract* is a "possible ideal" (expressed as pure abstraction, concepts).
- The *probable* is an "actual possibility" usually expressed mathematically, such as a percentage.[12]

In this schema, the virtual and the concrete are both real, but one is an ideal and the other actual. Like the virtual, the abstract is an ideal, but it is possible (not existing) rather than real (existing). For Shields, the probable is an actual possibility, such as the chance of rain tomorrow. "This is a continuum of soft oppositions," Shields explains, "for example, the virtual might feed and nurture the possible and is clearly in a dependent relation to the actual (in the case of virtual reality, this would be exemplified by its reliance on telecommunications infrastructure, technology and living bodies)."[13]

Shields' understanding of the virtual draws directly on Gilles Deleuze's reading of the late-nineteenth- and early-twentieth-century philosopher Henri Bergson. For Deleuze, the virtual is "real without being actual, ideal without being abstract"; the virtual is not a copy but a genuine dimension of reality composed of differential relations and tendencies.[14] Unlike the "possible," which is realized

[12] Shields, *The Virtual*, 28–29.
[13] Shields, *The Virtual*, 29.
[14] Gilles Deleuze, *Bergsonism* (New York: Zone Books, 1997), 96.

through resemblance or limitation, the virtual is actualized through creation, producing real differences when it becomes actual.[15] This means that virtual experiences are not diminished imitations of the material world but actualizations of potentialities, opening access to relations, temporalities, and scales that remain latent in the material world. This is key to remember: the virtual is not pure fantasy; it is *real*. On *Aniara*, the Mima is dependent on the ship's infrastructure and the labor of the Mima; it is also dependent on the world it references—the existence of Earth and its diaspora in the Solar System. When this connection is irreparably severed, the Mima loses some of what made its visions real. The Mima largely lacks the ability to "feed and nurture the possible," but this is offered by some non-fictional VR experiences, such as *Biidaaban*.

Embodiment and the Virtual

Embodiment and touch have played important roles throughout this project in understanding how we relate to the botanical world and how artists mediate these relationships, from the botanical multispecies visuality outlined in Chapter 1 to the embodied and animated resistance of Chapter 2. Considering the phenomenological presence that Shields identifies as central to VR, in this chapter I will show in this chapter how embodiment and affect are key to understanding how we relate to and evaluate virtual nature. On the subject of touch, feminist science and technology studies scholar María Puig de la Bellacasa writes in her 2017 book, *Matters of Care:*

[15] Deleuze, *Bergsonism*, 96–7.

Speculative Ethics in More Than Human Worlds, that "to think with touch has a potential to inspire a sense of connectedness that can further problematize abstractions and disengagements of (epistemological) distances, the bifurcations between subjects and objects."[16] For Puig de la Bellacasa, touch challenges what she considers the "primacy of detached vision" (as seen in the "god-trick" of documentaries like *The Green Planet* from Chapter 1) and can help us fully appreciate the embodiment of subjectivity.[17]

Embodiment entails much more than just touch or even the five traditional human senses. A concern with embodiment necessarily entails a concern with affectability and with all sensations. Biological processes, involuntary functions, the autonomic nervous system, and even thoughts (which impact the others) are all features of embodiment. So, when we tend to embodiment, we tend to how the external world changes us. What, then, do we make of experiences of virtual or simulated nature that cause bodily sensations and impact the biological operations of our bodies? Such experiences are often treated as disembodied. In 1999, literary critic N. Katherine Hayles wrote that "embodiment has been systematically downplayed or erased in the cybernetic construction of the posthuman," referencing the way that digital technology is often seen, by both its critics and champions, as transcending the materiality of the body.[18] We saw this clearly in Michael Heim's assertion in Chapter

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[16] María Puig de la Bellacasa, *Matters of Care: Speculative Ethics in More Than Human Worlds* (Minneapolis: University of Minnesota Press, 2017), 97.
[17] Puig de la Bellacasa, *Matters of Care*, 95.
[18] N. Katherine Hayles, *How We Became Posthuman: Virtual Bodies In Cybernetics, Literature, and Informatics* (Chicago: University of Chicago Press, 1999), 4.

1 that "at the computer interface, the spirit migrates from the body to a world of total representation. Information and images float through the Platonic mind without a grounding in bodily experience."[19] The body never surrenders to the incorporeal, however; it is always tethered firmly to the world of referents, and the body is awash with experiences.

If embodiment names how the external world changes us, then a crucial question is how virtual environments register as bodily force—less as representational images than as intensities with duration and effect. Philosopher Brian Massumi, who is also influenced by Deleuze's writing in the virtual, identifies *intensity* (defined as "the strength or duration of the image's effect") as central to understanding the virtual.[20] Intensity, he adds, "is embodied in purely autonomic reactions most directly manifested in the skin."[21] For Massumi, environments and experiences matter less as representations and more as events of intensity. In his example of a soccer game, what organizes experience is not the image of the field but a "tensile force-field" of potential created by bodies, objects, and goals, where play can reach a "pitch of intensity" as the ball nears a goal.[22] If we translate this example to virtual nature, the key question is not whether a digital tree looks exactly like a real one, but whether the

[19] Michael Heim, The *Metaphysics of Virtual Reality* (Oxford: Oxford University Press, 1993), 101.
[20] Brian Massumi, *Parables for the Virtual: Movement, Affect, Sensation* (Durham: Duke University Press, 2021), 26.
[21] Massumi, Parables *for the Virtual*, 27.
[22] Massumi, Parables *for the Virtual*, 78.

virtual environment produces these kinds of lived intensities by arranging perception and movement within a charged field of relation.

Puig de la Bellacasa's emphasis on "thinking with touch" is also useful here precisely because VR often withholds literal, physical contact. Rather than treating this absence as a simple disqualification of VR's embodied force, I return to the framework of haptic visuality developed in Chapter 1. Following Laura U. Marks, haptic perception involves tactile, kinesthetic, and proprioceptive dimensions, and in haptic visuality "the eyes themselves function like organs of touch."[23] In other words, mediated images can still stage a felt proximity that recruits the body—through orientation, balance, and the viewer's motor anticipation—even when the body never makes contact. At the same time, this remains a partial substitute; haptic visuality can intensify presence and intimacy, but it cannot fully reproduce the open-ended reciprocity of material contact. This distinction clarifies why virtual nature can be meaningfully embodied while still lacking the multisensory density and risk of being in the concrete world.

There is an abundance of studies from the behavioral sciences that suggest spending time in natural environments has positive physical and psychological effects.[24] This might seem like common sense, but in addition to any health implications this research has, it also speaks to embodied relationships with nature.

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[23] Laura U. Marks, *Touch: Sensuous Theory and Multisensory Media* (Minneapolis: University of Minnesota Press, 2002), 2.
[24] Diana E. Bowler et al., "A Systematic Review of Evidence for the Added Benefits to Health of Exposure to Natural Environments," *BMC Public Health* 10, article number 456 (2010). https://doi.org/10.1186/1471-2458-10-456.

Our bodies react profoundly to the sights, sounds, smells, and textures associated with natural environments. Those like Heim who view virtual experiences as disembodied might suggest that no such reactions would occur in virtual nature. Likewise, those who dismiss artificial nature as wholly unsatisfactory and inauthentic might make similar pronouncements.

An increasingly large body of literature, however, demonstrates that the body reacts similarly (even if not identically) to virtual nature. A 2013 study by researchers at Lund University, in Sweden, sought to understand if there was a link between sounds of nature experiences in a virtual environment and stress recovery. Participants were divided into three groups: those who would recover from stress tests in an immersive virtual forest (fig. 3.2) with the sounds of birds and babbling brooks, those who would recover in the forest without sounds, and a control group recovering in the non-virtual lab. Measuring cardiovascular data and cortisol levels, the researchers found significantly enhanced stress recovery in the group that experienced the forest with sound. This shows a meaningfully embodied response to the forest, as well as a suggestion that the visual and auditory work together in this process (something that was lacking in the Mimarobe's silent post-Mima projection screen). The researchers conclude their study by noting, "There seems to be a significant interactive effect between sound modality and visual input in the virtual nature setting, contributing to increased para-sympathetic activity and more efficient

recovery after virtually-induced stress."[25] Other studies report similar findings regarding varied experiences of virtual or simulated nature.



FIGURE 3.2. Photo of VR nature used in the Lund University study.

My intention in bringing in these studies is not to argue that virtual nature is the same as or a suitable stand-in for organic and earthy nature. In its current form, typical VR experiences lack a level of multisensory density (no contact with the skin, smell, or changes to temperature). Beyond proprioceptive and emotional impacts, we are not vulnerable to virtual nature; allergens, microbes, and the risks of weather are not present, for example. The virtual environment is also designed and bounded, whereas the concrete is unpredictable. This research nonetheless points to two important factors: virtual experiences are meaningfully embodied and there is some level of continuity between our embodied experiences with concrete nature and

[25] Matilda Annerstedt, "Inducing physiological stress recovery with sounds of nature in a virtual reality forest — Results from a pilot study," *Physiology & Behavior* 118 (2013): 249. https://doi.org/10.1016/j.physbeh.2013.05.023.

virtual nature. The virtual and the real are inextricably intertwined and cannot be separated. The character and limitations of this continuity are explored in the following pages. If virtual experiences of nature provoke bodily responses related to concrete nature, how do we distinguish between the real and the virtual? How do we value the two? Does accepting these premises prime us to accept a future where nature can be completely substituted virtually? In what follows, I argue that we can acknowledge the embodiment intrinsic to the virtual while still acknowledging the value, the primacy, even, of concrete nature. It is necessary to first address the fears of many scholars that artificiality is antithetical to authenticity and that granting the artificial any import renders its referents valueless.

Artificiality and the Human Hand

Landscape architect Anne Whiston Spirn writes about Frederick Law Olmsted, the landscape architect most well-known for co-designing Central Park with Calvert Vaux, and his struggles against what he deemed as artificial. For Olmsted, the binary of authenticity and artificiality seemed to possess a moral charge. Spirn writes that Olmsted suffered nervous ailments and that he sought relief in "natural scenery" as opposed to what he called "artificial pleasures," including theatres, parades, and promenades."[26] This valuation of the absence of the human hand is seen in Olmsted's designs and his unrealized proposals, including the one for Niagara Falls at the end of

[26] Anne Whiston Spirn, "Constructing Nature: The Legacy of Frederick Law Olmsted," *Uncommon Ground: Rethinking the Human Place in Nature*, ed. William Cronon (New York: W.W. Norton, 1996), 93.

the nineteenth century. Spirn suggests that Niagara Falls has long been "the epitome of the sublime" for many Americans.[27] We see this today, for example, on a New York State website for the Niagara Falls State Park, where the language of the sublime is used to describe the falls as possessing "awe-inspiring scenery."[28] The reality is that the falls and their surroundings have been greatly shaped by human intervention, in contrast to that connotation of sublimity associated with transcendence above the human. By the 1860s, however, the falls had become less spectacular due to low water flow resulting from industrial water diversions. Olmsted was eventually involved in several surveys and reports concerning the falls. Among the findings was that first-time visitors to the falls experienced two kinds of disappointments: failed expectations for the falls and a distraction by the "objectionable artificial character" of the surrounding area.[29] To address this latter concern, Olmsted and Vaux recommended the removal of all "artificial" structures in the area, such as mills and other industrial buildings. In addition to this, Olmsted and Vaux designed paths, carriageways, and overlooks with railings to aid visitors' access to the falls. There is a contradiction here in that some human-made features are considered to be unsightly and artificial, while others are accepted because they provide convenience. The boundary of the epithet of artificiality seems to stop short of anything that would prevent leisure tourism.

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[27] Spirn, "Constructing Nature," 95.
[28] "Niagara Falls State Park," New York State Office of Parks, Recreation and Historic Preservation, accessed May 30, 2025, https://parks.ny.gov/parks/46/.
[29] Spirn, "Constructing Nature," 95-96.

This paradoxical approach to artificiality at Niagara was not just Olmsted's. A 1926 commission hoped to find a way to restore "the vanished beauty" of the falls and considered the construction of weirs to divert more water over the falls for the sake of the "betterment of the spectacle."[30] A 1967 commission worried about the "artificial encirclement" of skylines from neighboring cities, suggesting that the experience of Niagara should belie the facts of the falls' location and context (one might call this an artificial or deceitful experience itself).[31] Through these examples, we see a sense of artificiality that is not truly concerned with the human hand but rather with the patent and inescapable presence of such alterations. That is to say, the nearby urban skylines are not considered artificial because they are human made, but because they distract from an illusion of detachment from the world of culture. Weirs and pathways, so long as they are hidden or easy to ignore, are not labeled as artificial or anathema to nature.

For Spirn, landscape architecture, and particularly Olmsted's approach, has an almost self-defeating function that can contribute to the idea of nature as absent signs of human-initiated change. Spirn argues that in his work, such as Central Park and the Back Bay Fens in Boston, Olmsted disguised his artifice so well that these built environments "were not recognized and valued as human constructs."[32] That is to say, as time wore on, Olmsted's alterations of land were forgotten by much of the public, and these landmarks became naturalized, so to speak, and are often taken as natural

[30] Spirn, "Constructing Nature," 97.
[31] Spirn, "Constructing Nature," 98.
[32] Spirn, "Constructing Nature," 111.

oases, preserved among urban development, rather than features of urban development themselves. Even large landscapes and landmarks associated with the sublime, such as Niagara, are implicated in this process of change and masking of change. As Spirn reminds readers, "Niagara is constructed through processes of nonhuman nature, through water use and treaties, through paintings and postcards, memory and myth."[33] Spirn's goal seems to be neither to condemn nor champion the manipulation of land or the concept of artificiality. Rather, she argues that by acknowledging the role humans have played in constructing these landscapes, we are forced to "confront the *human* values we inevitably project upon these places."[34]

Writing two decades before Spirn, social scientist Martin H. Krieger also invoked Niagara Falls in an attempt to complicate certain notions of artificiality in nature. The lay definition of "artificial" includes within its seemingly simple terms the grounds for much debate about those entities to which the word should be applied and the ethical implications of such designations. *Merriam-Webster*, for example, defines *artificial* as "made, produced, or done by humans especially to seem like something natural : MAN-MADE."[35] At first glance, this definition might seem intuitive, and it does indeed conform with the word's everyday use. The synonym of "man-made" might be the most straightforward. The inclusion of "to seem like something natural" makes this term much more complex and complicated. As Krieger

[33] Spirn, "Constructing Nature," 98.
[34] Spirn, "Constructing Nature," 112.
[35] "Artificial," *Merriam-Webster*, accessed July 7, 2025, https://www.merriam-webster.com/dictionary/artificial.

wrote in his 1973 *Science* article, "What's Wrong with Plastic Trees?," "the phenomena that the public thinks of as 'natural' often requires great artifice in their creation."[36] He cites concerns about the state of Niagara Falls by the public that were ongoing nearly a century after Olmsted's reports. In particular, Krieger reports that an increase in debris at the bottom of the falls made some feel like they were not experiencing the "real" falls, and thus several proposals were made for "perfecting" the falls and bringing it back to its so-called natural state. However, the state of the falls that the public was accustomed to was already shaped by hydroelectric projects, and any new changes would also be exercises in artifice or manipulation. Krieger detailed three kinds of proposals for "restoring" the falls, including converting it into a monument, treating it as an event (people would come at times based on rockfall predictions), and treating it as a show (in which water flow would be actively controlled).[37] But all of these proposals contradicted the stated aims of those who mourned the loss of "authentic" nature, as each would require manipulation, artifice, or framing. Here we begin to see a potential feedback loop when considering the artificial: if the humanly contrived is based on a natural model that is itself humanly contrived, how can we determine origins? Krieger, like Spirn, doesn't seem particularly concerned about origins and authenticity, since he also acknowledges that all landscapes are constructed. But Krieger is perhaps more of a pragmatist than Spirn, less concerned with uncovering sedimented values and ideologies. In fact,

[36] Martin H. Krieger, "What's Wrong with Plastic Trees?" *Science* 179, no. 4072 (Feb. 2, 1973): 448.
[37] Krieger, "What's Wrong with Plastic Trees?," 447.

Krieger concludes by noting that "artificial prairies and wildernesses have been created, and there is no reason to believe that these artificial environments need to be unsatisfactory for those who experience them."[38]

Simulations and Artificiality

Hayles extends the discussion of artificiality and its relationship to nature by shifting to the subjects of artificial life, simulations, and VR. Though the roots of VR can be seen at least several decades prior, the 1990s represented a major moment in the popularization of the technology.[39] Though commercial VR products wouldn't take off until more recent years, Hayles' writing from the 1990s documents some of the prevailing attitudes towards this then-emerging (and still-emerging) technology. "Is this a vision of utopia," she asks, "or of a high-tech electronic drug that threatens to replace our delight in the natural world with a perverse desire to live in electronically mediated simulations?"[40] For many people concerned with the environment, she continues, there is a fear that VR poses a threat to the natural world

[38] Krieger, "What's Wrong with Plastic Trees?," 453.
[39] Rob Shields' chronology of virtual reality technologies begins in the 1930s with early flight simulators and with the Cinerama. The Vitarama, and its successor the Cinerama, were multi-projector systems with curved screens. Many of the subsequent developments are experimental technologies until a number of commercially and publicly available products and technologies emerged in the 1990s. This is also when Nintendo's Virtual Boy headset gaming console was briefly on the market. Though it was a commercial failure, it was perhaps the most high-profile VR technology up to that point. Shields, *The Virtual*, 56–57.
[40] N. Katherine Hayles, "Simulated Nature and Natural Simulations: Rethinking the Relation between the Beholder and the World," *Uncommon Ground: Rethinking the Human Place in Nature*, ed. William Cronon (New York: W.W. Norton, 1996), 409-10.

because if people are content with digital simulations, they might lose any regard for the natural world. She poses this as a "bad simulation, good nature" dualism. Hayles demonstrates, however, that *simulation* is itself problematic in the way it is popularly conceived. For example, referring to how our experiences are shaped by precedent, Hayles writes that "when 'nature' becomes an object of *visual* consumption ... there is a good chance it has already left the realm of firsthand experience and entered the category of constructed experience that we can appropriately call simulation."[41] If I ever visit Niagara Falls, for example, my experience will be heavily shaped by the paintings, photographs, and films through which I have already encountered the falls. This is to say that rather than simulation being equivalent to artificial imitations of nature, nature itself is already often experienced through mediation. To choose the side of nature over simulation, she contends, does not escape this dualism but only reinforces it. For Hayles, if nature and simulation can be cleaved apart, there is a risk in believing that "nature is natural because it is unmediated" and "simulation is artificial because it is constructed," but she wants to show that nature can be constructed and simulation can be a natural process.[42]

Hayles cites the research of Chilean biologist Humberto Maturana on sensory perception in frogs to think about how nature can be seen as a simulation. In short, what Maturana and his colleagues found is that frogs' eyes communicate with their brains in ways that are "highly processed and species specific."[43] In their now-famous

[41] Hayles, "Simulated Nature and Natural Simulations," 411.
[42] Hayles, "Simulated Nature and Natural Simulations," 418.
[43] Hayles, "Simulated Nature and Natural Simulations," 413.

1959 journal article, the biologists explain their findings as showing that "the eye speaks to the brain in a language already highly organized and interpreted, instead of transmitting some more or less accurate copy of the distribution of light on the receptors."[44] What this means is that rather than translating the world as it "really is," frogs' eyes and brains interpret the world based on a set of internal rules or processes that would be alien or unintelligible to other species. If this is true of all species, can we speak of an authentic world that exists outside of mediation? In Maturana's model, the observer is a part of that which they observe. Though they do not cite Maturana, there are similarities here with feminist physicist Karen Barad's theory of agential realism, in which "'observer' and 'observed' are nothing more than two physical systems intra-acting in the marking of the 'effect' by the 'cause.'"[45] It is for this reason that Barad calls into question that there are "representations, on the one hand, and ontologically separate entities awaiting representation, on the other."[46] For Maturana and Barad, reality (and nature, we might presume) is not an already-existing and knowable state but rather something that emerges through various processes—possibly a simulation.

As a sort of heuristic foil, Hayles places Maturana's research alongside debates about artificial life (alife). For many alife researchers, aliveness is found in

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[44] J.Y. Lettvin et al., "What the Frog's Eye Tells the Frog's Brain," *Proceedings of the IRE* 47, no. 11 (1959): 1950.
[45] Karen Barad, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning* (Durham, NC: Duke University Press, 2007), 340.
[46] Barad, *Meeting the Universe Halfway*, 49.

the "logical form" of an organism rather than the materiality of its construction. That is, something is alive if it acts as life does, whether it is organic, silicone, or digital. Hayles argues that this line of thinking has roots going at least as far back as Plato, who privileged "abstract patterns over embodied physicality."[47] Hayles examines Tierra, a computer simulation ecologist Thomas S. Ray designed to replicate organic evolution over a much quicker timespan. Starting with only a few simple rules, once initiated and left on its own, the program resulted in the creation of a diverse array of self-replicating types of code that competed for processor time and memory space. Some have called this simulation a "world" full of life because it was generated from "simple underlying rules and forms," which for many is the defining feature of a world.[48] If Maturana shows that the world is a simulation, then perhaps Tierra and alife show that simulations create unique worlds.

Both of these scenarios highlight the complexity of the relationship between artificiality/simulations and nature. These concepts cannot be diametrically opposed if they are co-constitutive. Hayles, nonetheless, finds fault in interpretations of both Maturana's research and Tierra. She feels Maturana's anti-representationalism acknowledges the internal transformation while ignoring the incoming data, which is not inconsequential.[49] And many interpretations of Tierra take no account of the observer. Both scenarios, she argues, "perform an act of closure that cuts off the

[47] Hayles, "Simulated Nature and Natural Simulations," 419.
[48] Hayles, "Simulated Nature and Natural Simulations," 422–23.
[49] Hayles, "Simulated Nature and Natural Simulations," 417.

beholder from the world."[50] For Maturana, the world is the internal processes; for Tierra, it is a "formally closed system." Both accounts, she continues, lack an explanation for how "experience emerges from interactivity between the observer and the world."[51] For Hayles, that which is missing from these accounts—interactivity—is precisely the key to understanding reality. Reality, she concludes, is neither the world itself nor the observer but the interaction between the two. Like Barad, nature for Hayles is relationality.

Artificiality and Moral Panic

Hayles and Spirn both challenge the notion of a strict divide between nature and culture (or authenticity and artificiality). They do so, however, without conflating the two. They would likely see the meaningful connection between the Mima's images and the Earth without ever suggesting that they are identical. The writings cited in this chapter by both scholars originate from the 1994 "Reinventing Nature" seminar at UC Irvine, and its accompanying 1995 anthology *Uncommon Ground: Rethinking the Human Place in Nature*, represents an important moment in the development of the field of environmental humanities. Though participants came from diverse academic fields, including Italian literature, plant biology, history, geology, and architecture, there is a common throughline among the collected essays: conceptions of the thing called *nature* are highly contingent and culturally specific.

[50] Hayles, "Simulated Nature and Natural Simulations," 425.
[51] Hayles, "Simulated Nature and Natural Simulations," 425.

Although *Biidaaban* and *Aniara* the film both emerged in the late 2010s, the debates they activate are rooted in a longer genealogy of anxieties about simulation, artificiality, and the status of nature. The 1990s represent a key inflection point; the rise of consumer digital technologies and postmodern critique generated a powerful fear that technological mediation would replace the real. These anxieties about artificiality reflect the ontological anxieties about climate change, mass extinction, pollution, and habitat loss. Resistance to the kind of environmental humanities expressed in *Uncommon Ground* is most forcefully articulated in a dueling conference hosted at the University of California, Santa Cruz (UCSC), by Michael E. Soulé and Gary Lease, professors of environmental studies and the history of consciousness, respectively, at UCSC. Their anthology was published in 1995 as *Reinventing Nature? Responses to Postmodern Deconstruction*. As telegraphed by the sarcastic question mark in the anthology's title, the bugbear of "postmodern deconstruction," and Lease's introduction titled "Nature Under Fire," this anthology takes an incendiary approach to those who argue for the constructedness of nature. In a 1995 review of the anthology, a writer for *Science* notes "some of the more dubious characterizations of the postmodern position one finds here" and that many of the contributors "repeatedly link [postmodernism] to schools of thought it has little or nothing or nothing in common with, or, as in the case of humanism, to traditions it

fundamentally opposes."[52] The anthology's concerns over the constructedness of nature seem to be animated by an anxiety over artificiality.

Referring to the "postmodern" idea that wildlands must be artificial because there are no pristine places, Soulé says that from this premise one can "make the facile argument that [these places] have no value as 'nature.'" Once this "fantastic leap of logic" is made, he continues, "the ideologists license themselves and their benefactors to exploit or abuse living nature, either for profit or for human welfare."[53] This is the heart of Soulé's attack on the constructedness of nature: If one affords any value to the artificial, or blurs the distinction between the artificial and the authentic, they are not just conceptually wrong, they are assaulting nature. It seems that he cannot imagine that one might value the Amazon more than they value the artificial jungles of Disneyland if they also acknowledge the Amazon's constructedness. The implication is that the constructed—the human, the cultural—cannot be valued or that it must all be valued the same. To follow this to its logical conclusion would mean that people value billboards the same as literature, temples the same as park benches, and slinkies the same as pacemakers.

Philosopher Albert Borgmann expresses related concerns with more nuance, but he nonetheless refuses to allow a certain level of complexity in the artificial

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[52] Jeffrey Hearn, review of *Reinventing Nature? Responses to Postmodern Deconstruction*, eds. Michael E. Soulé and Gary Lease, *Science* 269, no. 5222 (July 21, 1995): 423.
[53]Michael E. Soulé, "The Social Siege of Nature," *Reinventing Nature?: Responses to Postmodern Deconstruction*, eds. by Michael E. Soulé and Gary Lease (Washington, DC: Island Press, 1995), 155.

versus nature debate. Borgmann seems to see the purveyors of deconstruction as aligned with the destructive forces of modernism, writing in *Reinventing Nature?* that "if the modern project of controlling reality and dominating nature was to succeed, it had to culminate in a pervasive artificiality and the end of nature."[54] Biologist Paul Shepard writes similarly that for the deconstructionists, "a world beyond our control is so terrifying that we can—indeed, must—believe only in the landscapes of our imagination."[55] For Borgmann, the concept of artificiality aids the destruction of nature; for Shepard, deconstructionists retreat to artificiality and imagination out of a fear of living without controlling nature. Their own fears about artificiality and the philosophical disorder it can bring, however, go unexamined. In fact, throughout *Reinventing Nature?*, artificiality is invoked as an epithet without any need for explanation. It is treated as *a priori* negative and inferior.

Philosopher Nancy Fraser helpfully distinguishes between three different conceptions of the term *nature*: Nature I, Nature II, and Nature III. Nature I refers to biophysical science; Nature II is the constructed and instrumentalized nature of capitalism; and Nature III is "the object studied by historical materialism," which "is nature entangled with human history, shaped by and shaping the latter."[56] This triad helps understand how the fear of artificial nature stems from a conflation of the

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[54] Albert Borgmann, "The Nature of Reality and the Reality of Nature," *Reinventing Nature?: Responses to Postmodern Deconstruction*, eds. Michael E. Soulé and Gary Lease (Washington, DC: Island Press, 1995), 33.
[55] Borgmann, "The Nature of Reality and the Reality of Nature," 23.
[56] Nancy Fraser, "Climates of Capital: For a Trans-Environmental Eco-Socialism," *New Left Review* 127 (2021), https://newleftreview.org/issues/ii127/articles/nancy-fraser-climates-of-capital.

different types of nature. Fear that acknowledging constructedness invites nihilism about nature takes aim at the wrong target. Treating all mediation as a slide into the "artificial" implicitly conflates Nature III (inevitably mediated and historical) with Nature II (that capitalist ontology which devalues nature by definition) while presuming that only an unmediated Nature I could count as real or authentic. This more precise understanding of nature clears the ground for evaluating claims about authenticity and artificiality without retreating to untenable binaries, and it prepares the way for my argument that what matters in virtual nature is not its supposed disembodiment, but the kinds of relations it enables across these types of nature

While Borgmann doesn't explain why artificiality is inferior to nature, he does attempt to understand what differentiates the two. To do so, he contrasts skiing in the Northern Rockies with skiing at a hypothetical indoor ski facility in Los Angeles. Even while recognizing the level of artifice that goes into the alpine slopes—artificial snow, ski lifts, bulldozed terrains—Borgmann senses, as likely most people would, that there is a difference between these two experiences. For him, this difference rests on two qualities: "the mountain possesses a commanding presence and a telling continuity with the surrounding world."[57] The importance of a commanding presence seems particularly fallacious. Borgmann argues that in the postmodern moment, the old natural/artificial distinction was replaced with a real/hyperreal distinction, hyperreal being a term coined by Jean Baudrillard as "a real without origin."[58]

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[57] Borgmann, "The Nature of Reality and the Reality of Nature," 38.
[58] Jean Baudrillard, *Simulacra and Simulation*, trans. Sheila Faria Glaser (Ann Arbor: University of Michigan Press, 2010), 1.

Referencing Jorge Luis Borges' 1946 short story "On Exactitude in Science," in which a cartographer draws a 1:1-scale map of an empire, Baudrillard explains that with the hyperreal, "the territory no longer precedes the map, nor does it survive it. It is nevertheless the map that precedes the territory." While it is clear that Borgmann invokes the hyperreal to suggest that the "skiorama" in Los Angeles is without referent, it is peculiar that he gives any role in distinguishing between reality and hyperreality to a commanding presence. He favors grand vistas that speak to a specific notion of the sublime, condemning what environmental historian William Cronon calls "humble places" to hyperreality.[59] That chaparral habitats, for example, which are less likely to be defined as "commanding," are necessarily less real than a commercial ski resort betrays Borgmann's prejudice for the sublime as more real or authentic.

Borgmann's second distinguishing feature between the Rockies and the skiorama—continuity with the surrounding world—has more weight but also falls short. Borgmann explains how the mountain experience instructs the individual about the world around them. For example, he writes that the amount of snow "tells you" that "Pacific moisture and arctic cold have been colliding and mixing with each other often this winter, but not often enough to produce a snowpack and a runoff this spring that would relieve the drought of these past six years."[60] In contrast, the skiorama, he

[59] William Cronon, "The Trouble of Wilderness; or, Getting Back to the Wrong Nature," *Uncommon Ground: Rethinking the Human Place in Nature*, ed. William Cronon (New York: W.W. Norton, 1996), 86.
[60] Borgmann, "The Nature of Reality and the Reality of Nature," 39.

writes, “tells you nothing about the world at large.” But does one need to have a certain level of knowledge of atmospheric processes to experience this “continuity”? If a skier doesn’t know Pacific moisture from Gulf moisture, do they enter the realm of the hyperreal? And what if they are fooled by the artificial snow that Borgmann readily admits is present? Borgmann is correct that the mountain experience *does* tell one about the world around them, even if it is not based on specific ecosystem or climatic knowledge. The skiorama, however, also says much about its world. It speaks about the importance of athletics in a consumer society, the power of wealth to transform environments, the urban design of its Los Angeles neighborhood, and much more. Borgmann treats the skiorama as completely disconnected from the world—a solipsist leisure universe that can tell us nothing about anything but itself. This is not the case; even under Baudrillard’s terms, a hyperreal skiorama would still be connected to the outside world, in fact, it would have great influence upon that world (the map *precedes* the territory). So, it must be able to tell us about its surroundings, but not if we only look for signs of the sublime as traditionally conceived.

In his article cited above, Krieger implies that an artificial prairie is no different than a natural one so long as those who experience them are satisfied. This equivalence is not expressed by the “Reinventing Nature” participants, even though critics like Lease, Soulé, and Borgmann see this kind of thinking in any blurring of the artificial/nature boundary. What lies in the space between Krieger and Soulé? On what philosophical grounds can we admit that the mountain top is both constructed and more valuable than the skiorama? A generous reading of Borgmann’s view of

continuity in the mountains sees him arguing for the importance of relationships. Regardless of how much human intervention is needed to construct the ski resort, he detects the presence of highly valued relationships—particularly atmospheric, geological, and biological relationships. The skiorama is not without relationships, but certainly, there are different relationships at play. Perhaps what truly distinguishes the mountain experience and the skiorama is the value afforded to the attendant relationships (as seen on *Aniara* when these kinds of relationships are severed). Herein lies another problem with Borgmann's approach to the hyperreal, a problem that is recurrent in critiques of artificiality and nature. Though I argue that the mountain and the skiorama are equally real (or equally artificial), I agree with Borgmann that they can be valued differently. For Borgmann, however, if we dispense with binaries, such as real/artificial or nature/culture, values become meaningless. "Such a postmodern view," he writes, characterizing the critique of binaries, "revels in the resulting abundance of possibilities and is zealous in declaring all of them equally valuable."[61] Borgmann and Soulé's straw man of cultural constructionism is that without a nature/culture dualism, we can make no values—we're just blindly flailing around in an ethical void. But values are the domain of culture. One might even argue that if we collapse the divide between nature and culture, we are *better* positioned to compare the Rockies to the urban skiorama because they would inhabit the same ontological plane.

[61] Borgmann, "The Nature of Reality and the Reality of Nature," 38.

The importance of relationships is often missing in arguments that see artificiality as inherently destructive to nature. This is all the more perplexing because relationality is the fundamental characteristic of ecology. The idea of artificiality itself is perhaps a trap. Even for those who generally view nature and culture as distinct, there is room to recognize that culture shapes nature and vice versa—this recalls Shields' idea assertion that "the virtual might feed and nurture the possible."[62] Nature and culture need not be antithetical, even if they are sometimes treated as such. Whether we look at the dictionary definition or the philosophical and political arguments of *Reinventing Nature?*, artificiality is often conceived of as the inherent opposite of nature or authenticity. Once that opposition is invoked, it can become difficult to escape. When artificiality, constructedness, culture, and simulations all become conflated, a vision of the world is presented that implicitly denies relationality between nature and culture. There seems to be a moral panic among some that stems from their distrust of others' ability to account for and value the many different relationships in their world. Borgmann writes that consumption in a world of hyperreality is "debilitating mindlessness,"[63] thus stripping agency and even self-awareness from consumers. Soulé writes that "the majority of people, often because they are uneducated, remain pre-modern," and he mockingly conflates Indigenous practices and beliefs with New Age spirituality. [64] In these writers, I sense a fear that if we open ourselves up to a nuanced relationship between nature and

[62] Shields, *The Virtual*, 29.
[63] Borgmann, "The Nature of Reality and the Reality of Nature," 41.
[64] Soulé, "The Social Siege of Nature," 139.

culture, we won't be able to navigate the ensuing complexity.

In the 2000s, however, the philosophical landscape shifted with the emergence of speculative realism and object-oriented ontology (OOO). The term *speculative realism* emerged in 2007 as the title for a series of talks by philosophers Ray Brassier, Iain Hamilton Grant, Graham Harman, and Quentin Meillassoux at Goldsmith's College, University of London. Timothy Morton, a proponent of speculative realism, describes the movement as an umbrella term for thinkers who challenge correlationism, which is "the notion that philosophy can only talk within a narrow bandwidth, restricted to the human-world correlate: meaning is only possible between a human mind and what it thinks."[65] OOO is a subset of speculative realism considered with relationality. Harman coined the term in his 1999 doctoral thesis, which was published as *Tool-Being: Heidegger and the Metaphysics of Objects* in 2002. In *Tool-Being*, he writes that "contrary to the dominant assumption of philosophy since Kant, the true chasm in ontology lies not between humans and the world, but between *objects and relations*."[66] Key to much of the speculative realist and OOO thinking that would emerge is another term coined by philosopher Manuel DeLanda in 2002, *flat ontology*, which distinguished between hierarchical and . DeLanda writes that:

> "while an ontology based on relations between general types and particular instances is *hierarchical*, each level representing a different ontological category (organism, species, genera), an approach in terms of interacting parts

[65] Timothy Morton, *Hyperobjects: Philosophy and Ecology after the End of the World* (Minneapolis: University of Minnesota Press, 2013), 9.
[66] Graham Harman, *Tool-Being: Heidegger and the Metaphysics of Objects* (Chicago: Open Court, 2002), 9, ProQuest Ebook Central.

> and emergent wholes leads to a *flat ontology*, one made exclusively of unique, singular individuals, differing in spatio-temporal scale but not in ontological status."[67]

DeLanda elaborates, explaining that "a flat ontology of individuals assumes that, at every spatio-temporal scale, there are properties of a whole which cannot be explained as a mere sum of the properties of its component parts, but which emerge from their causal interactions."[68] DeLanda shares with Hayles and Barad a prioritization of interactivity to being. For OOO and speculative realism more broadly, humans, plants, stones, circuits, and code are equally real actors in the world. In this shift, OOO and speculative realism reconfigure the terms of debate that animated the 1990s: rather than treating the artificial as a degraded copy of the natural, they dissolve the hierarchy altogether. What the 1990s cast as a threat—technological mediation's encroachment on "authentic" nature—becomes, in the 2000s, a reminder that all entities, virtual or concrete, participate in the same ontological field.

If OOO and speculative realism collapse the hierarchical distinction between humans and the world, the Anthropocene discourse of the 2010s amplifies the consequences of that collapse by revealing a planet already constructed and mediated by human activity and technology. Rather than debating whether the artificial threatens to replace the natural, Anthropocene discourse shows that the natural has long been entangled with industrial, colonial, and technoscientific interventions, as

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[67] Manuel DeLanda, *Intensive Science and Virtual Philosophy* (London: Bloomsbury, 2002), 51.
[68] DeLanda, *Intensive Science and Virtual Philosophy*, 166.

we see in Fraser's three natures. Climate models, carbon capture technology, and geoengineering proposals further render Earth as a system increasingly understood, and potentially managed, through simulation and technical mediation. In this sense, Anthropocene discourse does not resolve earlier debates about artificiality but shifts the focus. The question is no longer whether technology mediates nature, but how such mediation shapes the conditions of life on Earth. In the 2020s, debates about artificiality are dominated by concerns about artificial intelligence (AI). With an entity like the Mima from *Aniara* more conceivable in 2026 than it was only eight years ago, the nature of thought and consciousness are called into question. While AI is beyond the scope of this dissertation, these technologies escalate the ontological and ecological stakes of artificiality, because these systems do not merely mediate the world, they construct worlds that are simultaneously trained on pre-existing texts and images while sometimes becoming increasingly unmoored from clear referents in the concrete world. AI reframes older anxieties about artificiality: the question is no longer whether the virtual encroaches upon the real, but how algorithmically produced worlds reshape our ability to perceive, interpret, and act in the concrete world.

If the 1990s framed virtual environments as substitutes for a threatened "real," and the Anthropocene revealed the impossibility of any unmediated nature at all, *Biidaaban* takes a different approach altogether. Rather than reproducing the artificiality panic that shaped earlier debates, *Biidaaban* treats virtual ecology as a site for relational world-making. Fraser's account of capitalism's production of "historical

natures" suggests that all encounters with nature—mined, farmed, urbanized, colonized—are already mediated encounters. Virtual plants, then, participate in an existing field of socioecological mediation rather than standing apart from it. This helps shift the question from whether virtual nature is "authentic" to what kinds of relations it enables—a move central to *Biidaaban* and to the broader argument of this chapter.

Virtual World-Making

Jackson's *Biidaaban: First Light* embraces the complexity of mediated nature and invites viewers to dwell on it. Rather than rejecting artificiality, it uses virtual tools to imagine and produce new worlds. *Biidaaban* is a VR experience that places the viewer in a future Toronto where, as the artist describes it, "all the elements of nature sort of come back in."[69] The audience is taken through locations throughout the city, where they see the concrete jungle transformed into a more literal forest bursting with life—plant, fungal, animal, and human (fig. 3.3). (While the environment is vibrant, it of course lacks the multisensory density of concrete nature.) There are no cars or subways, no airplanes in the sky, and no electricity to be seen.[70] The piece toys with the perceptions and aesthetics of apocalypse, dystopia, and

[69] *CBC Arts: Exhibitionists*, season 4, episode 6, "Land," aired November 2, 2018, on CBC, https://gem.cbc.ca/cbc-arts-exhibitionists/s04/.
[70] A paradox of the artwork is that it could not exist in the world it envisions. This is not a contradiction, however, because Jackson never calls on this specific vision as one that must be achieved. And even if she were to, she inhabits a very different world with very different tools at her disposal.

utopia. Visually, plants are the clearest marker of the city's transformation; aurally, this marker is the persistent presence of three languages indigenous to the city—Wendat, Anishinaabemowin, and Kanien'kéha. In both cases, futurity is expressed by signifiers of tradition, the plants and languages that have traditionally called this land home. These plants and languages, however, are not relegated to the past, and they have survived colonization and urbanization. It is, then, understandable that the piece shares a title with Amanda Strong's stop-motion film from the same year. Jackson explains that the three parts of the word *biidaaban* are "about the past and the future colliding to create the present moment."[71] This film is simultaneously rooted in numerous temporalities, and its vision of Toronto can't be seen as a return to the past. *Biidaaban*'s Toronto is virtual, simulated, and imagined, but its strength as an artwork lies in its connection to the physical world (Toronto and beyond). The piece is not an escape, as the Mima was for those desperate souls on *Aniara*. Rather, it is both a product and an agent of care, preservation, transformation, and world-making. From a Deleuzian perspective, *Biidaaban*'s plants are not digital substitutes for absent referents but actualizations of virtual ecological forces. What matters is not whether a VR plant "resembles" an antecedent specimen, but how a virtual ecology actualizes latent potentials and relationships.

[71] *CBC Arts: Exhibitionists*, "Land."



FIGURE 3.3. Still from *Biidaaban: First Light*, by Lisa Jackson, 2018. Courtesy of the National Film Board of Canada.

Biidaaban is a room-scale VR experience, meaning that a viewer must wear an audio-visual VR headset, and that ideally a space of about 10-by-10 feet is needed to allow the viewer to stand and turn around in the 360-degree environment.[72] The experience is about 8 minutes long, and it is something between a film and a video game. The piece is immersive, and one may feel that they are inhabiting the world of the piece. The artwork was created as part of Jackson's graduate thesis in the MFA in Film program at York University in Toronto.[73] In her written thesis, Jackson reports

[72] I experienced the piece in a museum office, which necessitated sitting in a swivel chair and trying not to get entangled in wires in the crapped space. Elizabeth Linda Jackson, "Biidaaban: First Light," (master's thesis, York University, 2019), 61, http://hdl.handle.net/10315/36250.

[73] *Biidaaban* premiered at the Tribeca Film Festival in April 2018. The piece was presented on the festival circuit, including at the Vancouver International Film Festival (2018), the Melbourne Film Festival (2018), and the imagineNATIVE Film

that many viewers would "reach out in an attempt to touch the elements of the world" and that "many feel quite afraid when on the edge of the building in the last scene, others are exhilarated."[74] These reactions speak to the embodied verisimilitude that VR experiences can create; sensations that are of a different quality than traditional screen media. VR experiences that simulate zero gravity, for example, can be nausea-inducing, and rock-climbing games, such as *The Climb* (2019), can make one feel like they're dangling off the side of a cliff-face even while their legs are clearly planted firmly on the ground. Massumi's concept of intensity as "the strength or duration of the image's effect" helps name what is at stake in these experiences. Jackson, who has been working in traditional film since 2004, explains that *Biidaaban* reflects her "desire to give the viewer more agency in experiencing the work—making them meet it halfway in a sense, rather than passively receive it. Physically being able to move around in such a hyper-real environment is thrilling and puts us in the driver's seat. It really feels like you've visited this future Toronto, rather than having 'watched' something."[75] T.J. Demos argues that video games "provide ways to rehearse and practice reactions, feelings, and states that extend nuance, texture, and expectation

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and Media Arts Festival (2018) in Toronto, among others. *Biidaaban* was produced by the National Film Board of Canada and won a Canadian Screen Award in 2019 for Best Immersive Experience Fiction. The piece has also been presented in an exhibition format at the Museum of Contemporary Art Toronto; the National Museum of Modern and Contemporary Art, Korea; and White Water Gallery in North Bay, Ontario. The artwork is not available to individual users of VR headsets.

[74] Jackson, "Biidaaban: First Light," 44.

[75] Randy Astle, "'Our Culture is in Our Language': Lisa Jackson on Her VR Film *Biidaaban: First Light* and Indigenous Futurism," *Filmmaker Magazine*, July 23, 2018, https://filmmakermagazine.com/105184-our-culture-is-in-our-language-lisa-jackson-on-her-vr-film-biidaaban-first-light-and-indigenous-futurism/.

into everyday life."[76] With their similarity to video games, VR experiences are full of these same potentials, possibly enhanced by the medium's immersive nature.

The researchers at Lund University who studied stress test recovery in virtual nature used a VR system called a CAVE (cave automatic virtual environment), which is a room with projections on three walls and the floor. Participants sat in the middle of the room and wore stereoscopic glasses, like those used for 3D movies, and a 5.1 surround sound system was used for audio.[77] *Biidaaban*, like popular commercially available VR systems, uses a head-mounted display (HMD). There are ongoing debates and research into the differences between these systems. A user can see their own body in a CAVE system, and they can see the bodies of others who may be inhabiting the same space. Daniel R. Mestre, a researcher at the Institute of Movement Sciences and the head of the Mediterranean Virtual Reality Center (both at Aix-Marseille University), writes that when it comes to immersion, "an HMD seems to be better, since the virtual environment is visible all around the subject, which is not the case in a 'classical' four-sided cave, in which the ceiling and back-screen are 'missing'." He further explains that while there are some six-sided CAVE systems, they are rare, costly, technically complex, and may cause claustrophobia.[78] The hard edges where walls and the floor meet in CAVE can also disrupt the illusion of the

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[76] T.J. Demos, *Beyond the World's End: Arts of Living at the Crossing* (Durham: Duke University Press, 2020), 109.
[77] Matilda Annerstedt, "Inducing physiological stress recovery," 242.
[78] Daniel R. Mestre, "CAVE versus Head-Mounted Displays: Ongoing thoughts," *IS&T International Symposium on Electronic Imaging: The Engineering Reality of Virtual Reality* (2017): 32, https://doi.org/10.2352/ISSN.2470-1173.2017.3.ERVR-094.

environment. If the Lund University CAVE was able to generate meaningful and positive embodied responses, we can hypothesize that *Biidaaban* is at least as likely to generate these kinds of responses.[79] Jackson thinks VR is well-suited for this piece because the immersive character of the work allows "the user to see their own thinking reflected back to them and open the door to interesting conversations."[80] If this is a work about world-making, an active rather than passive spectatorship may be called for.

While viewers of *Biidaaban* can view what they look at in the virtual environment, turning around or looking up or down, they cannot interact with the environment in more complex ways, such as controlling what spaces they inhabit or interacting with objects or entities in front of them (though there are some exceptions discussed later). In this way, there is still a filmic quality to the artwork. While this may represent a limit to the piece's immersiveness, it nonetheless creates an environment conducive to contemplation and reflection. The experience balances

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[79] There has been some research comparing CAVE versus HMD systems, but they are few and their research focused on disparate topics, such as fear of heights, engagement in physical exercise, and the perception of distance. M. Carmen Juan and David Pérez, "Comparison of the Levels of Presence and Anxiety in an Acrophobic Environment Viewed via HMD or CAVE," *Presence: Teleoperators and Virtual Environments* 18, no. 3 (2009): 232–48, https://doi.org/10.1162/pres.18.3.232; Aviv Elor et al. "On Shooting Stars: Comparing CAVE and HMD Immersive Virtual Reality Exergaming for Adults with Mixed Ability," *ACM Transactions on Computing for Healthcare* 1, no. 4 (September 2020): 1–22, https://doi.org/10.1145/3396249; Mihalache Ghinea et al., "Perception of Absolute Distances Within Different Visualization Systems: HMD and CAVE," *Augmented Reality, Virtual Reality, and Computer Graphics*, eds. Patrick Bourdot and Lucio Tommaso De Paolis (Cham, Switzerland: Springer International Publishing AG, 2018), 148–61, https://doi.org/10.1007/978-3-319-95270-3_10.

[80] Randy Astle, "'Our Culture is in Our Language.'"

embodied immersion and more pensive spectatorship in a way that may be akin to some forms of meditation.

The piece begins with a spoken and written Wendat sentence: "Änen shayo'tron' / Shonywäa'tihchia'ih sentiohkwa'?" Translated in English to "Where did the creator put your people?," the provocative question frames the piece as centered on questions of place, belonging, and indigeneity. Jackson states that she was once asking this question, and for posing it in *Biidaaban*, she says "the aim was that it would connect the person experiencing the piece to their own 'place' and connections at the outset of the experience, and also subtly introduce the idea of a Creator or more-than-human presence."[81] And thus, while the artwork is about Toronto (or Tkaronto, the Kanien'kéha-language name used in *Biidaaban*), its significance and vision are meant to spread much further afield.

The opening scene is located in the Osgoode subway station in the heart of downtown Toronto (fig. 3.4). The station provides access to Toronto City Hall, the Court of Appeal for Ontario (the highest level of court in the province), the U.S. Consulate, and other major government and corporate offices. This, then, is an important site of power in contemporary Canada. However, in *Biidaaban*, these powers seem to have waned. There are no subway cars in the station, and the subway tunnel and tracks are flooded. The station is lightly littered, including a discarded copy of the *Toronto Star* newspaper at the viewer's foot. Lichen covers the floor, the concrete walls, and the ceiling of the station. A tree is miraculously growing out of

[81] Jackson, "Biidaaban: First Light," 31.

the cement of the flooded tunnel. Some parts of the ceiling have caved in, exposing this subterranean realm to natural light. Some viewers may see this as a post-apocalyptic landscape, perhaps a nuclear wasteland. But an upturned canoe with paddles nearby suggests that this is not an abandoned place.

In the next scene, the viewer is taken just above ground to Nathan Phillips Square, the large plaza adjacent to Toronto City Hall (fig. 3.5).[82] Much of the square is occupied by a large body of water. Concrete slabs are disturbed and ajar, while grasses or cattails grow tall in the water. Trees grow tall in the former plaza out of cracks in the concrete. We also get glimpses of the surrounding skyscrapers, which appear to have shattered windows and to be covered in mosses or lichen. This scene, like the previous one, resembles photographs from the Chernobyl exclusion zone that show the proliferation of plant life in the abandoned Ukrainian city of Pripyat.

[82] Jackson worked with digital artist Mathew Borrett, whose *Hypnagogic City* (2017) series of fantastical alternative versions of Nathan Phillips Square inspired the look of *Biidaaban*.



FIGURE 3.4. Still from *Biidaaban: First Light*, by Lisa Jackson, 2018. Courtesy of the National Film Board of Canada.



FIGURE 3.5. Still from *Biidaaban: First Light*, by Lisa Jackson, 2018. Courtesy of the National Film Board of Canada.

The presence of a woman, who is on her knees digging in the dirt, shatters these associations of abandonment and decay. What she is digging for is unclear. Is she looking for something? Is she planting? The time one spends in this scene depends on their gaze, and, according to Jackson, this is intended to increase the likelihood of encountering the digging woman. There are other signs of a living human presence, such as a pile of collected wood and chairs around a table, the latter even suggesting leisure. *Biidaaban* is not an anti-human vision; it is not a bitter indictment of the human species in favor of the botanical. Wendy Makoons Geniusz, the Cree and Métis scholar mentioned in Chapter 1, writes that *inaadiziwin* (or anishinaabe psychology or way of being) "places humans as an integral part of the cycle of life, rather than at the center of the universe or at some level above animals, plants, and the rest of Creation."[83] The proliferation of plant life in Toronto *is* the key marker of radical change, but it is not at the expense of the human. "From the perspective of *izhitwaawin* [anishinaabe culture, teachings, customs, history]," she writes, "if we cannot recognize that plants and trees have the ability to help us reclaim our balance, hope, and sense of self-worth, then our revitalization programs will never be fully effective."[84] Geniusz is writing about a revitalization of *izhitwaawin* and Anishinaabe botanical knowledge, and it is important to keep this specific context clear and not overextend it. We can see how the new plant-inhabitants of Toronto are specifically markers of a revitalization of the city's traditional Indigenous people.

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[83] Wendy Makoons Geniusz, *Our Knowledge Is Not Primitive: Decolonizing Botanical Anishinaabe Teachings* (Syracuse: Syracuse University Press, 2009), 57.
[84] Geniusz, *Our Knowledge Is Not Primitive*, 161.

These are markers of hope and balance. This perspective shared by Geniusz, and reflected, I believe, in *Biidaaban* shows that non-Humanism does not need to be anti-human.

Aesthetics of Dystopia

I first encountered *Biidaaban* in 2019, but I did not experience the full artwork until April of 2023. In May of 2023, I saw an aerial photograph of the Ukrainian city of Bakhmut taken by a Ukrainian military drone. The photograph immediately struck me as resembling *Biidaaban*, and later, when I would accidentally open a screenshot saved on my computer, I would sometimes momentarily think it was a still from *Biidaaban*. The photograph is highly saturated, so green grass and the orange of some buildings stand out; it almost appears computer-generated. This explains some of the resemblance to the saturated, computer-generated world of *Biidaaban*. The photograph shows an expanse of tower blocks destroyed after years of shelling by the Russian military. The skyscrapers are crumbling and windowless; though not covered in moss and lichen, burn scars resemble the botanical patina at a distance. How could one mistake two drastically different scenarios? One is the result of a real-life military invasion and genocide, while the other is a fictional vision of life flourishing.

Jackson disagrees with anyone who sees something post-apocalyptic in *Biidaaban*, but she speaks about this so much that she seems to have anticipated this interpretation. In a radio interview on CKLB in the Northwest Territories, Jackson addressed the matter frankly, saying, “It’s not post-apocalyptic … I’m calling it a

reconciled version of Toronto."[85] In another interview, she states that the piece is an attempt to "shake us out of our inability to envision a future different from where we are without calling it 'post-apocalyptic.' Because if you take a different perspective, the apocalypse has already happened."[86] In this latter statement, Jackson references the idea, introduced by Kyle Whyte and Grace L. Dillon in the previous chapter, that Indigenous people in the Americas have already faced an apocalypse beginning in 1492. In her thesis, she writes, "Implicit in the piece is the question of whether the 'apocalypse' may have already occurred, if you are Indigenous or of the tree nation, animal nations, etc."[87] It is clear that *Biidaaban* is meant to represent a turn *away* from apocalypse. In a world saturated with apocalyptic narratives—from politics to pop culture—T.J. Demos urges us to look toward "radical futurisms," which "remake time."[88] Radical futurisms, he explains, "derail temporal trajectories from present tracks, casting what's-to-come into the undetermined not-yet."[89] This sounds a lot like Deleuze's not yet actualized real (the virtual) and suggests a potent role for virtual experiences and art for "rehearsing" alternative futures and worlds. Ecocinema scholar Salma Monani observes similar temporal concerns in Indigenous media's future-oriented refusals. Both Demos and Monani write about Theo Jean Cuthand's

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[85] Lisa Jackson, interview by Kristen Berkeley, CKLB Radio 101.9 FM, 2018, https://soundcloud.com/cklbradio/lisa-jackson-interview-with-reporterhost-kristen-berkeley/.
[86] Randy Astle, "'Our Culture is in Our Language.'"
[87] Jackson, "Biidaaban: First Light," 2.
[88] T.J. Demos, *Radical Futurisms: Ecologies of Collapse, Chronopolitics, and Justice-to-Come* (London: Sternberg Press, 2023), 19.
[89] Demos, *Radical Futurisms*, 19.

comedic short film *Reclamation* (2018), about an Indigenous-populated world following the departure of settlers for Mars. Monani describes the film as refusing "the tried-old trope of the vanishing Indian" and showing Indigenous people "thriving 150 years into the future," rather than disappearing under apocalyptic conditions.[90] For Demos, *Reclamation* is an example of radical futurism. *Biidaaban* likewise turns away from collapse thinking and stages flourishing and Indigenous continuity.

In the CKLB interview, Jackson states, "I wanted to look at a future that isn't a dark future, but it is one where our current structures are no longer there."[91] The lack of these current structures—be they technological, governmental, or infrastructural—can feel and look apocalyptic. In some cases, it truly is apocalyptic, as in post-Chernobyl Pripyat or contemporary Bakhmut. The real suffering in these places cannot be treated lightly. In these cases, however, it is not so much the lack of structures of the status quo that is apocalyptic, but how they disappeared. *Biidaaban* doesn't dwell on how this flourishing of life came about, and there is little to indicate any specific event. Chapter 2 shows that for some Indigenous thinkers the apocalypse is not a hypothetical future but an ongoing colonial condition. Mark Fisher's capitalist realism, introduced in the same chapter, helps explain why the absence of familiar capitalist infrastructure or forms feels and looks apocalyptic. Taken together, these insights clarify why Indigenous works such as *Biidaaban* disrupt mainstream

[90] Salma Monani, *Indigenous Ecocinema: Decolonizing Media Environments* (Morgantown: West Virginia University Press, 2024), 5.
[91] Lisa Jackson, interview by Kristen Berkeley.

dystopian aesthetics: they do not imagine alternatives so much as enact them in the present.

In contrast to the idea that colonization represents an Indigenous apocalypse, Whyte argues that for the ancestors of many non-Indigenous people, the present represents "fantasy times." "Many of the ancestors of today's allies," he elaborates, "designed the worlds we live in today to fulfill their fantasies of the future. Today's worlds, such as those of U.S. settler colonialism in North America, were constructed to provide privileges to their descendants."[92] For those who benefit or derive comfort from the world built by these ancestors (and this can include non-Indigenous and Indigenous people alike), visions of another world can be scary, confusing, or uncomfortable. Even *Biidaaban,* as a high-tech artwork, could not exist in the world it envisions. It is under these conditions that verdant, bountiful life could be mistaken for an apocalypse. *Biidaaban* is designed to push viewers into this uncomfortable space and reconcile how, for example, the presence of moss comes to induce fear. In her book *Gathering Moss: A Natural and Cultural History of Mosses*, Potawatomi botanist Robin Wall Kimmerer explains that mosses are particularly vulnerable to air pollution. Writing about mosses in cities, she instructs, "Next time the bus is late, take those waiting minutes to look around for signs of life. Mosses on the trees are a good

[92] Kyle P. Whyte, "Indigenous Science (Fiction) for the Anthropocene: Ancestral Dystopias and Fantasies of Climate Change Crises," *Environment and Planning E: Nature and Space* 1, no. 1–2 (March 2018): 236–237, https://doi.org/10.1177/2514848618777621.

sign, their absence a concern."[93] Moss-covered Toronto is in recovery in *Biidaaban*. Along these lines, film festival programmer Sophie Gergaud writes that in Indigenous futurist works like *Biidaaban*, "there is no sense of loss but rather a sense of addition and inclusion."[94]

In the third scene, viewers are taken to the top of a building near Nathan Phillips Square. It is nighttime, and the starry sky alludes to the lack of light pollution in this de-electrified metropolis. The viewer enters the dome; soon after, it dissolves and the viewer is enveloped by stars. Jackson calls this scene "Skyworld." A voice is heard reciting a poem in Anishinaabemowin. Dust motes in the atmosphere transform into the Anishinaabemowin text of the poem, which is translated into English if one looks at it. Jackson explains that "the text is three-dimensional and has an intimacy about it, not layered over top of this world but a tangible part of it. As the words disappear, they turn once again into dust motes and zip out towards us, seemingly alive themselves."[95] Liveness permeates even text.

By the end of the piece, the viewer returns to the rooftop location, only it is now dawn—the first light to which the title refers. The rooftop is shown to be a place for cultivating crops, including corn. Tobacco leaves are drying on racks. When the city below and beyond is revealed, we see an expanse of green. The streets are filled

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[93] Robin Wall Kimmerer, *Gathering Moss: A Natural and Cultural History of Mosses* (Corvallis: Oregon State University Press, 2003), 99.
[94] Sophie Gergaud, "Indigenous Cinemas and Futurisms: How Indigenous Visual Arts Are Shifting the Narratives and Offering a New Relationship to Space and Landscapes," *Recherches anglaises et nordaméricaines* 54 (2021): 167, https://doi.org/10.4000/ranam.862.
[95] Jackson, "Biidaaban: First Light," 40.

with trees. Plants emerge out of skyscrapers like those that cling to cliffsides. The iconic clock tower of Toronto's Old City Hall is covered in lichen. Spoken language and text envelop the viewer here as well (fig. 3.6). Plants and language are not just coincidental markers of the city's transformation; they are linked. Jackson says of the Indigenous languages in the piece, "These languages grow on this land in the same way that plants do. The languages have been spoken here for thousands of years; they capture this land more than any other languages."[96] Like plants, these languages are of the land, and they are restorative, hopeful, and helpful.



FIGURE 3.6. Still from *Biidaaban: First Light*, by Lisa Jackson, 2018. Courtesy of the National Film Board of Canada.

[96] Rhiannon Johnson, "Anishinaabe Artist's New VR Experience Takes an Indigenous Futurist Look at Toronto," CBC News, April 14, 2018, https://www.cbc.ca/news/indigenous/lisa-jackson-biidaaban-vr-future-toronto-1.4619041/.

Conclusion

Plants (and language) play an active, generative role in the world. But what do we make of virtual plants? What role do they play? In his book *Why Look at Plants?* art historian Giovanni Aloi answers the book's title question by proposing to "think about plants as ... bodies that partake into complex, reflexive, and intra-active relationships of coevolution and becoming."[97] We can extend Aloi's question and ask, "Why look at virtual plants?" It is not because they might replace botanical life, but because they too participate in the relational and political fields that shape how plant life becomes visible, valued, or sidelined. For, as Fraser reminds us, encounters with nature are always already mediated. Virtual plants invite us to rehearse different modes of attention, care, and co-presence, even within a digital ecology, and thus help recondition how we apprehend botanical life once we return to the concrete world.

Writing about the alife program Tierra and Maturana's research on frog eyes, Hayles concludes that reality is dependent upon the interaction of the observer and the observed. When applied to a virtual world like the one in *Biidaaban*, we could say that neither the virtual environment nor our perception of it constitutes a distinct reality. Rather, reality can be identified in our manipulation of the environment (in the subtle ways afforded in the artwork), the bodily and phenomenological experiences produced, and, perhaps most importantly, how the artwork impacts the

[97] Giovanni Aloi, "Introduction: Why Look at Plants?," *Why Look at Plants? The Botanical Emergence in Contemporary Art* (Leiden, Netherlands: Brill Rodopi, 2018), 35.

viewer after the headset is taken off. It is clear that for Jackson, the artwork is not a form of pure entertainment but is politically engaged with the physical world no less than other forms of visual media, political discourse, or literature. The virtual world of *Biidaaban*—future Nathan Phillips Square, the moss-covered skyscrapers, the Digging Woman—don't seem to be the ultimate subjects of the piece; rather, the world we inhabit is the target here. The work is concerned with producing thought and interpretation in the minds of its viewers, generating conversations, and perhaps even changing how people see and inhabit the world. One of Jackson's explicitly stated goals for the project is to inspire underrepresented communities, especially Indigenous youths, to take this technology and "create new worlds that we can all experience."[98] In the way that María Puig de la Bellacasa argues that touch can inspire a sense of connectedness and care, the embodied virtual nature of *Biidaaban* is oriented toward care and connection. The plants in *Biidaaban* speak alongside the voices, and they issue a call to action.

When Borgmann distinguishes between the Rocky Mountains and an indoor ski facility, he calls upon continuity with the surrounding world as that which separates the authentic from the artificial. The connectedness at the heart of *Biidaaban* demonstrates an important way in which virtual nature is deeply connected to the surrounding world. Should one walk away from *Biidaaban* and see a moss-covered urban wall a little differently, that is an instance of meaningful continuity. If a young artist spends their time developing an app or a game that expresses their

[98] *CBC Arts: Exhibitionists*, "Land."

vision for the world, that is profound continuity. There is likewise a powerful continuity present if *Biidaaban* enters debates about nature, progress, language, or decolonization, as it has. As argued previously, Borgmann's notion of continuity is superficial and exclusionary. It is not my argument that the indoor ski facility is equal to the Rocky Mountain ski resort. Rather, for many like Borgmann and Soulé, *authenticity* and *artificiality* become reductive value judgments that can get in the way of a clear articulation of actual values (such as the value of being outdoors or the value of being in a sublime environment). Likewise, we can appreciate *Biidaaban* as a deeply authentic experience without devaluing our real natural world. Jackson, of course, most likely values the complicated, material Toronto, and all its life, far more than her virtual vision. But it is the relationship between these two worlds and temporalities that gives the work its power.

As argued previously, the conflation or confusion of artificiality, constructedness, culture, and simulations erects an unnecessary barrier between nature and culture. *Biidaaban* makes manifest the fallacy of this opposition, even in the highly technologically mediated case of virtual nature. The politics and the ontology that undergird *Biidaaban* are indebted to care. The project is an act of care on Jackson's part. The world envisioned is one in which care and self-interest have not diverged. The artist's goal is to engender further care in participants. Mary Siisip Geniusz, an apprentice to the Anishinaabe medicine woman Keewaydinoquay, writes that "the plants always know their place in the cycle of life. They are always willing

to serve their fellow beings, for we are all brothers and sisters in the cycle together."[99] Geniusz describes the kind of multispecies care and obligation foundational to *Biidaaban*'s Toronto. This is a relationship of multispecies care, and care is always authentic and embodied. In her book on the subject of care, Puig de la Bellacasa argues that "thinking with care intervenes in the mattering of worlds."[100] That is, caring has an effect, it shapes the world, or brings other ones into being. Caring, Puig de la Bellacasa explains, "requires having to deal with necessary material doings of maintenance that absorb time but ground the everyday possibility of living as well as possible."[101] In the case of *Biidaaban,* care bridges the gap between the virtual and the concrete, or rather, it unites them. For Puig de la Bellacasa, care is not only a matter of affections, such as love. Care includes a dimension of maintenance or labor, as well as political and ethical dimensions.[102] Therefore, a caring relationship with plants is not just one of love and admiration, but it is a political relationship that requires action. Aloi argues that recognizing the complexity of plants "should not involve a rethinking of what we eat and what we do not," but rather, "in the context of the environmental global challenges we currently face, I seriously advocate that our responsibility as humans must encompass entire ecosystems."[103] Therefore,

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[99] Mary Siisip Geniusz, *Plants Have so Much to Give Us, All We Have to Do Is Ask: Anishinaabe Botanical Teachings*, ed. Wendy Makoons Geniusz (Minneapolis: University of Minnesota Press, 2015), 21.
[100] Puig de la Bellacasa, *Matters of Care*, 206.
[101] Puig de la Bellacasa, *Matters of Care*, 206.
[102] Puig de la Bellacasa, *Matters of Care*, 5.
[103] Aloi, "Why Look at Plants?," 10.

incorporating plants in an ethic of care does not mean one never kills a plant; rather, it is an ecosystem-scale politics that sees plants important, necessary, and affective.

Puig de la Bellacasa relates the term *technoscientific futurity* to "the persistence of a modern paradigm that associates the future with progress."[104] We see this kind of futurity clearly in the appropriated ag-tech imagery Suzanne Husky incorporated in *Which Plants to Teach Ethics to Artificial Intelligence*. This futurity is, however, incredibly pervasive and defines the world that is overturned in *Biidaaban*. Technoscientific futurity sees plants as resources or pests, such that their presence in cities can feel apocalyptic; it does not see them as neighbors, teachers, or caretakers. We must also acknowledge that *Biidaaban* and virtual nature are not exempt from technoscientific futurity. VR and related immersive technologies are not neutral vessels for care; they are entangled with corporate profits, extractive supply chains, and research histories and applications shaped by militarism and surveillance. The very affordances that make VR feel intimate—tracking bodies, capturing attention, generating a sense of presence—also make it useful for data collection and behavioral management. A relational ethics of virtual nature must therefore include not only what is represented in the headset, but the infrastructural and institutional systems that make such representation possible.

Writing about human-soil relations and permaculture, Puig de la Bellacasa argues that the idea of *care time* "might intercept" technoscientific futurity "because getting involved with soil's temporalities in a more caring way implies a disruption of

[104] Puig de la Bellacasa, *Matters of Care*, 174.

current modes of temporal dominance in more than human worlds, including their ratification by prevalent conceptions of innovation."[105] We can extend this to the temporalities of *Biidaaban*—the ambiguous fictional time of the experience, as well as stretched temporality of one's experience of the artwork, during the experience, and after the headset comes off. *Biidaaban* represents a Toronto that is both *now* and *not yet*. It resists anthropocentric domination and challenges the comfort we may find in its aesthetics. Puig de la Bellacasa further argues that attending to care in "more than human relations ends up joining calls for decentering unilinear, anthropocentric, temporalities in order to make time for a multiplicity of others."[106] To see the plants of future Toronto as constituting caring agents in a cosmopolitical web that crosses timescales, geographies, and even states of being is to challenge the humanist tenets responsible for ecological collapse, multispecies alienation, and both human and nonhuman exploitation. *Biidaaban* likewise complicates the restrictive, dualistic conceptions of authenticity and artificiality, or nature and culture, discussed earlier in this chapter. Jackson finds power and possibility in the future without resigning to technoscientific futurity, while resisting it in fact. Jackson puts the lie to the idea that non-humanist thought, art, or activism is hypocritical unless it is luddite. The virtual worlds of *Aniara* and *Biidaaban* are not equivalent because hope and possibility permeate the latter, in which care mediates a tangible relationship between the virtual and the concrete.

[105] Puig de la Bellacasa, *Matters of Care*, 172.
[106] Puig de la Bellacasa, *Matters of Care*, 214.

Conclusion:

Between the Botanical and the Technological

A central tension in this dissertation has been the relationship between the technological and the botanical. This resembles a contrast explored by the ecofeminist historian of science Carolyn Merchant between an "organismic" theory of nature and what she calls "mechanism." Focused on the early modern period in Europe (primarily the 16th and 17th centuries), Merchant's 1980 book *The Death of Nature: Women, Ecology and the Scientific Revolution* examines the effects of the so-called Scientific Revolution on women and nature. Considering evidence from the visual arts, literature, philosophy, law, and more, Merchant's meticulous history demonstrates how the centuries of the Scientific Revolution mark a transition from a prevalent organismic view of the world to a dominant mechanistic one. "Organismic theory," she writes, "emphasized interdependence among the parts of the human body, subordination of individual to communal purposes in family, community, and state, and vital life permeating the cosmos to the lowliest stone."[1] These worldviews had far-ranging impacts, shaping everything from gender relations to macroeconomic activity.

"Central to the organic theory," Merchant writes, "was the identification of nature, especially the earth, with a nurturing mother: a kindly beneficent female who provided for the needs of mankind in an ordered, planned universe."[2] This, however,

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[1] Carolyn Merchant, *The Death of Nature: Women, Ecology and the Scientific Revolution* (New York: HarperOne, 1989), 1.
[2] Merchant, *The Death of Nature*, 2.

was accompanied by and contrasted with another image of nature as female, one in which there was a "wild and uncontrollable nature that could render violence, storms, droughts and chaos."[3] Merchant argues that with the Scientific Revolution and the rise of mechanistic philosophy, the nurturing metaphor disappeared, and nature became something that needed to be controlled by science and technology, much like lustful women, alleged witches, and other "wild" women required control. Merchant cautions, however, that she does not wish to "reinstate nature as the mother of humankind nor to advocate that women resume the role of nurturer dictated by that historical identity. Both need to be liberated from the anthropocentric and stereotypic labels that degrade the serious underlying issues."[4] Merchant's project is not a paean to some lost, medieval feminist past.[5] I engage this genealogy because it offers a framework for distinguishing technoscientific control from relational practices of care, the very terrain on which my case studies operate. This helps clarify my thesis: technology is not inherently antithetical to authenticity or relationality; its ethical and ontological value turns on the relationships it enables and the worlds it helps bring into being.

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[3] Merchant, *The Death of Nature*, 2.

[4] Merchant, *The Death of Nature*, xxi.

[5] Merchant approaches this subject with great nuance and an understanding of the complexity of human organization. She acknowledges, for example, that both the nurturing and dominion metaphors predate the period under discussion. "The idea of dominion over the earth existed in Greek philosophy and Christian religion; that of the nurturing earth, in Greek and other pagan philosophies." Further, within the nurturing metaphor she identifies what she calls "the pastoral tradition." This tradition, she writes, "symbolized nature as a benevolent female, [and] it contained the implication that nature when plowed and cultivated could be used as a commodity and manipulated as a resource." In this we can see a dominating impulse latent even within the organismic worldview. Her abounding evidence across disciplines and cultural context, however, makes apparent overarching trends and implications of these theories and their transition. Merchant, *The Death of Nature*, 3, 8.

Merchant makes clear the costs and ramifications of the transition to a mechanistic worldview. She argues that the image of the nurturing earth "carried with it subtle ethical controls and restraints."[6] For example, she states that ancient restrictions on mining, which could be seen as a "violation of Mother Earth," were still in effect at the dawn of the early modern period.[7] But soon, these restrictions would be removed and "the sixteenth- and seventeenth-century imagination perceived a direct correlation between mining and digging into the nooks and crannies of a woman's body."[8]

In the mid-seventeenth century, the machine became the dominant metaphor for thinking about the earth and the universe. "In the organic world," Merchant explains, "order meant the function of each part within the larger whole, as determined by its nature, while power was diffused from the top downward through the social and cosmic hierarchies."[9] While the organic world could and did buttress oppressive systems, it also provided the support for alternative systems, including what Merchant calls "agrarian communism," present in many rural communities, in which "the unifying principle common to all was the good of the group over that of the individual."[10] In contrast, Merchant explains, "In the mechanical world, order was redefined to mean predictable behavior of each part within a rationally determined system of laws, while power derived from active and immediate intervention in a

[6] Merchant, *The Death of Nature*, 4.
[7] Merchant, *The Death of Nature*, 32.
[8] Merchant, *The Death of Nature*, 39.
[9] Merchant, *The Death of Nature*, 192–193.
[10] Merchant, *The Death of Nature*, 77.

secularized world."[11] The mechanistic world was one primed for manipulation and domination; the control of nature was sanctioned like never before.

The mechanistic worldview—now rechristened *technological*—remains dominant within contemporary capitalism. According to sociologist Andrew Ross, in the early seventeenth century, the word *technology* described a "systematic treatment, for example, a study of the arts, especially the useful *or* mechanical arts."[12] By the late nineteenth century, Ross continues, "science-based invention had become the driving force behind capitalist growth, and technology was increasingly used to refer to machinery itself."[13] Here, at the dawn of the contemporary era, we see the consolidation of the mechanistic worldview into what we now call the technological. This worldview is evident in the petrocapitalist refrain "Drill baby, drill," as well as in geoengineering proposals to mitigate climate change, such as injecting aerosols into the stratosphere or building space mirrors to deflect sunlight from the Earth. Mechanistic thinking is also evident more broadly in industry and technoscience, which, for Ross, is a term that represents a marriage between investments in scientific research and the needs of the states and corporations.[14] The ongoing utopianism regarding generative artificial intelligence promoted by industry leaders, politicians, and many laypeople is evidence of mechanistic thinking and technoscience's hold on

[11] Merchant, *The Death of Nature*, 193.
[12] Andrew Ross, "Technology," *New Keywords: A Revised Vocabulary of Culture and Society*, eds. Tony Bennett, Lawrence Grossberg, and Meaghan Morris (Malden, MA: Blackwell Publishing, 2005), 342.
[13] Ross, "Technology," 343.
[14] Ross, "Technology," 342.

contemporary life. Not only is the world a machine—now rendered most commonly as a computer—so is the mind.

The art practices investigated in this dissertation are entangled with this technoscience paradigm. They all rely on high-technology products, including state-of-the-art video cameras, advanced computer software, and the latest virtual reality hardware. Even a low-budget digital video product is reliant on transnational, multibillion-dollar corporations, their technologies, and their logics. But just as Merchant's project is not a work of medieval futurism or neo-Luddism, mine is not a generalized indictment of any and all technological mediation in the arts. Rather than examining my case studies through a binary lens of organismic-mechanistic opposition, I have investigated the spaces between and/or outside of these worldviews. This dissertation asks what happens when artists use products of a high-tech industry to explore the animating principles and the elusive epistemologies of an organismic outlook. How does organicism survive in the present? Can the tools of mechanism foster critiques of the foundation on which they depend? Do these artworks bridge a dualism between worldviews? I believe, in conclusion, that they have.

Rethinking both the categories of the human and the technological has been key, for me, to addressing these questions throughout this dissertation. Robin Wall Kimmerer describes *technology* as "simply the application of human knowledge to

solve problems, fulfill needs, or satisfy wants."[15] For this reason, "the most sophisticated food production technology ever devised," as Kimmerer sees it, is not the combine harvester, pesticides, agricultural drones, or drip irrigation. It is maize, or corn.[16] Ancient farmers took a barely edible grass and transformed it into a highly nutritious food staple. Mirroring the discussion in Chapter 3 about how artificiality can be valued differently under different circumstances, Kimmer distinguishes between technology as "autonomous machines that separate us from the living world" and "a sacred technology, which unites us."[17] Technology, in this latter, more multivalent and open sense, can foster multispecies relationality. Amanda Strong, in a similar vein, explains that she views "technology as a tool or extension of ourselves or material."[18] This kind of technology differs greatly from Ross' *technoscience* and Neda Atanasoski and Kalindi Vora's *technoliberalism*, described in Chapter 1, both of which name technology when it primarily serves corporate and state ends.

Across the case studies in this dissertation, technological tools emerge not as external or opposing forces but as participants in the encounters that shape human–nonhuman becoming. These artworks, I argue, demonstrate that interdependence includes not only living beings but also the material and technological entities through which relations are mediated. By challenging familiar divides between nature

[15] Robin Wall Kimmerer, "Corn Tastes Better on the Honor System," *Emergence Magazine*, October 31, 2018, https://emergencemagazine.org/feature/corn-tastes-better/.
[16] Kimmerer, "Corn Tastes Better on the Honor System."
[17] Kimmerer, "Corn Tastes Better on the Honor System."
[18] Amanda Strong, interview by Jeff Hume, BC Arts, June 25, 2019, https://www.cbc.ca/arts/6-astonishing-moments-from-amandencountersa-strong-s-stop-motion-short-film-biidaaban-1.5188094.

and culture, or organic and mechanical, the works show how technological mediation can sustain, rather than sever, multispecies connection. This resonates with environmental humanities scholar Stacy Alaimo's call to move beyond rigid binaries and toward a "material feminism" that embraces the messy, hybrid spaces where bodies, matter, and nature meet.[19] In this light, the practices I analyze demonstrate how screen-based technologies can help cultivate forms of care and accountability that do not rely on purity or separation, but instead arise from entangled, situated, and necessarily imperfect relations.

Further complicating the nature-culture, organic-technological divide, we have seen how, in their introduction to the field of ecomedia, Stephen Rust, Salma Monani, and Sean Cubitt contend that "we have also long understood media as flow—the processes and means by which we communicate. Now we understand media as particular concentrations of flows of minerals and energy. We begin to understand human beings themselves as media through which other environmental forces pass."[20] The concept of *flow* resonates with Rosa Braidotti's post-anthropocentric posthumanism, which for her is defined by connection that affirmatively "locates the subject in the flow of relations with multiple others."[21] Similarly, biologist and science and technology studies scholar Deboleena Roy offers

[19] Stacy Alaimo, *Undomesticated Ground: Recasting Nature as Feminist Space* (Ithaca: Cornell University Press, 2000).
[20] Stephen Rust, Salma Monani, and Sean Cubitt, "Introduction: Ecologies of Media," *Ecomedia: Key Issues,* eds., Stephen Rust, Salma Monani, and Sean Cubitt (London: Taylor and Francis, 2015), 5.
[21] Rosi Braidotti, *The Posthuman* (Cambridge, UK: Polity Press, 2013), 50.

a material feminism—what she calls "process ontology."[22] Key to this ontology is a philosophical worldview premised upon overcoming the divide between mind and matter, achieving immanence in multiplicity. She describes immanence as the idea that "all becomings exist beside or with other becomings upon a horizontal plane."[23] She explains that "everything shares a kind of oneness."[24] She insists that her "process ontology" does not erase difference. I take that to mean that all of existence is located on the same ontological/moral plane. In this way, the possibility of transcendence that the Enlightenment category of the Human is predicated upon evaporates because there is nowhere else to transcend to—there is no higher or superior position, no secure beyond, no prior, and no aftermath for any such discrete category. Though this might at first seem contradictory, this oneness and the proximity of immanence support a kind of difference that is not necessarily oppositional. Under this theory, there is room for engagement and allyship across differences rather than a need for assimilation or destruction, as in colonial encounters fueled by transcendence and separation.

As I have shown throughout this dissertation's examination of key artworks, the flow that defines our existence is always (even when invisible) multispecies. Our encounters with the botanical, including in, through, and as technological mediation, make us who we are. Relationality is immanent. Technology converges in this flow as

[22] Deboleena Roy, *Molecular Feminisms: Biology, Becomings, and Life in the Lab* (Seattle: University of Washington Press, 2018), 41.
[23] Roy, *Molecular Feminisms*, 208
[24] Roy, *Molecular Feminisms*, 221.

well, whether it is organic technology like maize, lead paint, or macro 3D cinematography. The flow of human, nonhuman, and technology has always been with us, and it has often been destructive. The artists discussed in this dissertation each chart a path for how artists and filmmakers can respond to the losses of the present and mediate meaningful, if always complicated, relationships with the botanical world. These concerns become only more pressing as AI and algorithmic thinking mediate ever more of our visual and ecological life, making it crucial to determine how technological systems might be reoriented toward relations of care rather than extraction.

Bibliography

Agamben, Giorgio. *The Open: Man and Animal*. Stanford: Stanford University Press, 2004.

Alaimo, Stacy. *Bodily Natures: Science, Environment, and the Material Self*. Bloomington: Indiana University Press, 2010.

———. *Undomesticated Ground: Recasting Nature as Feminist Space*. Ithaca: Cornell University Press, 2000.

Aloi, Giovanni. *Botanical Revolutions: How Plants Changed the Course of Art*. Los Angeles: Getty Publications, 2025.

———. "Introduction: Why Look at Plants?" In *Why Look at Plants? The Botanical Emergence in Contemporary Art*, 1–35. Leiden, Netherlands: Brill Rodopi, 2018.

Aloi, Giovanni, and Michael Marder. "Introduction." In *Vegetal Entwinements in Philosophy and Art: A Reader*, edited by Giovanni Aloi and Michael Marder, 1–10. Cambridge, MA: MIT Press, 2023.

Amad, Paula. "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 (February 2012): 66–86. https://doi.org/10.1080/03087298.2012.632567.

Annerstedt, Matilda. "Inducing physiological stress recovery with sounds of nature in a virtual reality forest — Results from a pilot study." *Physiology & Behavior* 118 (2013): 240–50. https://doi.org/10.1016/j.physbeh.2013.05.023.

"Artificial." In *Merriam-Webster*, Accessed July 7, 2025. https://www.merriam-webster.com/dictionary/artificial.

Astle, Randy. "'Our Culture is in Our Language': Lisa Jackson on Her VR Film *Biidaaban: First Light* and Indigenous Futurism." *Filmmaker Magazine*, July 23, 2018. https://filmmakermagazine.com/105184-our-culture-is-in-our-language-lisa-jackson-on-her-vr-film-biidaaban-first-light-and-indigenous-futurism/.

Atanasoski, Neda, and Kalindi Vora. *Surrogate Humanity: Race, Robots, and the Politics of Technological Futures*. Durham: Duke University Press, 2019.

Baier, Jansen. "Studies Debunk 'Nature is Healing' Narrative from 2020 Lockdowns." *Mongabay*. September 1, 2021.

https://news.mongabay.com/2021/09/studies-debunk-nature-is-healing-narrative-from-2020-lockdowns/.

Barad, Karen. *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning*. Durham: Duke University Press, 2007.

Baudrillard, Jean. *Simulacra and Simulation*, translated by Sheila Faria Glaser. Ann Arbor: University of Michigan Press, 2010.

Bhandar, Brenna. *Colonial Lives of Property: Law, Land, and Racial Regimes of Ownership*. Durham: Duke University Press, 2018.

Blanc, Nathalie, and Barbara L. Benish. *Form, Art, and the Environment: Engaging in Sustainability*. London: Routledge, 2016.

Blaser, Mario, and Marisol de la Cadena. "Introduction: Pluriverse: Proposals for a World of Many Worlds." In *A World of Many Worlds*, edited by Marisol de la Cadena and Mario Blaser, 1-22. Durham: Duke University Press, 2018.

Bordo, Susan R. *The Flight to Objectivity: Essays on Cartesianism and Culture.* Albany: State University of New York Press, 1987.

Borgmann, Albert. "The Nature of Reality and the Reality of Nature." In *Reinventing Nature?: Responses to Postmodern Deconstruction*, edited by Michael E. Soulé and Gary Lease, 31–46. Washington, DC: Island Press, 1995.

Bowler, Diana E., Lisette M. Buyung-Ali, Teri M. Knight, and Andrew S. Pullin. "A Systematic Review of Evidence for the Added Benefits to Health of Exposure to Natural Environments." *BMC Public Health* 10, article number 456 (2010). https://doi.org/10.1186/1471-2458-10-456.

Braddock, Alan C. and Christoph Irmscher. "Introduction." In *A Keener Perception: Ecocritical Studies in American Art History*, 1–22. Tuscaloosa: University of Alabama Press, 2009.

Braidotti, Rosi. *The Posthuman*. Cambridge, UK: Polity Press, 2013.

British Library, London. Cotton MS Vitellius C III.

Bryson, Norman. "The Gaze in the Expanded Field." In *Vision and Visuality*, edited by Hal Foster, 87–108. Seattle: Bay Press, 1988.

Buchan, Suzanne. "The Animated Female Body, Feminism(s) and 'Mushi'." In *Experimental and Expanded Animation: New Perspectives and Practices*,

edited by Vicky Smith and Nicky Hamlyn, 203–29. Cham, Switzerland: Springer International, 2018.

Canemaker, John. “Winsor McCay.” In *The American Animated Cartoon: A Critical Anthology*, eds. Danny Peary and Gerald Peary, 13–23. New York: E.P. Dutton, 1980.

Cardinal, Roger. “Thinking Through Things: The Presence of Objects in the Early Films of Jan Svankmajer.” In *Dark Alchemy: The Films of Jan Svankmajer*, edited by Peter Hames, 78–95. Towbridge, UK: Flicks Books, 1995.

Carels, Edwin. “Biometry and Antibodies Modernizing Animation /Animating Modernity.” In *Animism*, edited by Anselm Franke, 57–74. London: Sternberg Press, 2010.

Carrington, Leonora. “What is a Woman?” In *Surrealist Woman: An International Anthology*, edited by Penelope Resemont, 372–77. London: The Athlone Press, 1998.

CBC Arts: Exhibitionists. Season 4, episode 6, “Land.” Aired November 2, 2018, on CBC. https://gem.cbc.ca/cbc-arts-exhibitionists/s04/.

Chen, Mel Y. *Animacies: Biopolitics, Racial Mattering, and Queer Affect*. Durham: Duke University Press, 2012.

Coghlan, Simon. “Humanism, Anti-Humanism, and Nonhuman Animals.” *Society & Animals* 24, no. 4 (2016): 403–19. https://doi.org/10.1163/15685306-12341416.

Collins, Leah. “‘Live Action Could Never Have Created These Worlds’: Amanda Strong on Her Latest Film, *Biidaaban*.” CBC Arts. June 15, 2019. https://www.cbc.ca/arts/live-action-could-never-have-created-these-worlds-amanda-strong-on-her-latest-film-biidaaban-1.4821934.

Cornum, Lou. “The Creation Story is a Spaceship: Indigenous Futurism and Decolonial Deep Space.” *Voz-á-Voz* (2015). https://web.archive.org/web/20220927090040/http://www.vozavoz.ca/feature/lindsay-catherine-cornum.

Coulthard, Glen Sean. *Red Skin, White Masks: Rejecting the Colonial Politics of Recognition*. Minneapolis: University of Minnesota Press, 2014.

Cronon, William. “The Trouble of Wilderness; or, Getting Back to the Wrong Nature.” In *Uncommon Ground: Rethinking the Human Place in Nature*, edited by William Cronon, 69–90. New York: W.W. Norton, 1996.

Cubitt, Sean. *EcoMedia*. Amsterdam: Rodopi, 2005.

Daston, Lorraine. “Epistemic Images.” In *Vision and Its Instruments: Art, Science, and Technology in Early Modern Europe*, edited by Alina Payne, 13–35. University Park: Pennsylvania State University Press, 2015.

DeLanda, Manuel. *Intensive Science and Virtual Philosophy*. London: Bloomsbury, 2002.

Deleuze, Gilles. *Bergsonism*. New York: Zone Books, 1997.

Demos, T.J. *Against the Anthropocene: Visual Culture and Environment Today*. Berlin: Sternberg Press, 2017.

———. *Beyond the World’s End: Arts of Living at the Crossing*. Durham: Duke University Press, 2020.

———. *Decolonizing Nature: Contemporary Art and the Politics of Ecology.* Berlin: Sternberg Press, 2016.

_____. *Radical Futurisms: Ecologies of Collapse, Chronopolitics, and Justice-to-Come*. London: Sternberg Press, 2023.

Dikovitskaya, Margaret. *Visual Culture: The Study of the Visual after the Cultural Turn*. Cambridge, MA: MIT Press, 2006.

Dillon, Grace L. *Walking the Clouds: An Anthology of Indigenous Science Fiction*. Tucson: University of Arizona Press, 2012.

Donnelly, Hannah. “Indigenous Futures and Sovereign Romanticisms. Belonging to a Place in Time.” In *Sovereign Words: Indigenous Art, Curation and Criticism*, edited by Katya Garcia-Anton, 259-274. Amsterdam: Valiz, 2019.

Eisenstein, Sergei. *Sergei Eisenstein on Disney*, edited by Jay Leyda. London: Seagull Books, 2017.

Elor, Aviv, Michael Powell, Evanjelin Mahmoodi, Nico Hawthorne, Mircea Teodorescu, and Sri Kurniawan. “On Shooting Stars: Comparing CAVE and HMD Immersive Virtual Reality Exergaming for Adults with Mixed Ability.”

ACM Transactions on Computing for Healthcare 1, no. 4 (September 2020): 1–22. https://doi.org/10.1145/3396249.

Epstein, Sonia Shechet. "Algae and Fungi Meet Film: Sundance Short *Lichen*." Sloan Science and Film, January 31, 2020. https://scienceandfilm.org/articles/3280/algae-and-fungi-meet-film-sundance-short-lichen

Ermine, Willie. "The Ethical Space of Engagement." *Indigenous Law Journal* 6, no. 1 (2007): 193-203.

Fisher, Mark. *Capitalist Realism: Is There No Alternative?* Ropley, UK: Zero Books, 2009.

Foster, Victoria. "Surreal Encounters: Playing With the More-Than-Human at a Community Farm." *Qualitative Inquiry* 31, no. 1 (2023): 86–95. https://doi.org/10.1177/10778004231202936.

Foucault, Michel. *The Order of Things: An Archaeology of the Human Sciences*. London: Routledge, 2005.

Franke, Anselm. "Much Trouble in the Transportation of Souls, or The Sudden Disorganization of Boundaries." In *Animism*, edited by Anselm Franke, 11–53. London: Sternberg Press, 2010.

Fraser, Nancy. "Climates of Capital: For a Trans-Environmental Eco-Socialism." *New Left Review* 127 (2021). https://newleftreview.org/issues/ii127/articles/nancy-fraser-climates-of-capital.

Fukuyama, Francis. "The End of History?" *The National Interest*, no. 16 (1989): 3–18. https://www.jstor.org/stable/24027184.

Gan, Elaine, Anna Tsing, Heather Swanson, and Nils Bubandt. "Haunted Landscapes of the Anthropocene." In *Arts of Living on a Damaged Planet*, edited by Anna Tsing, Heather Swanson, Elaine Gan, and Nils Bubandt, G1–14. Minneapolis: Minnesota University Press, 2017.

Garcia, Sierra. "'We're the Virus': The Pandemic is Bringing out Environmentalism's Dark Side." *Grist*, March 30, 2020. https://grist.org/climate/were-the-virus-the-pandemic-is-bringing-out-environmentalisms-dark-side/.

Garneau, David. "Imaginary Spaces of Conciliation and Reconciliation: Art, Curation, and Healing." In *Arts of Engagement: Taking Aesthetic Action In*

and Beyond the Truth and Reconciliation Commission of Canada, edited by Dylan Robinson and Keavy Martin, 21–42. Waterloo, ON: Wilfrid Laurier University Press, 2016.

Geniusz, Mary Siisip. *Plants Have so Much to Give Us, All We Have to Do Is Ask: Anishinaabe Botanical Teachings*, edited by Wendy Makoons Geniusz. Minneapolis: University of Minnesota Press, 2015.

Geniusz, Wendy Makoons. *Our Knowledge Is Not Primitive: Decolonizing Botanical Anishinaabe Teachings*. Syracuse: Syracuse University Press, 2009.

George, Amber E., and J. L. Schatz, eds., *Screening the Nonhuman: Representations of Animal Others in the Media*. Lanham, MD: Lexington Books, 2016.

Gergaud, Sophie. "Indigenous Cinemas and Futurisms: How Indigenous Visual Arts Are Shifting the Narratives and Offering a New Relationship to Space and Landscapes." *Recherches anglaises et nordaméricaines* 54 (2021): 151–69. https://doi.org/10.4000/ranam.862.

Ghinea, Mihalache, Dinu Frunză, Jean-Rémy Chardonnet, Frédéric Merienne, and Andras Kemeny. "Perception of Absolute Distances Within Different Visualization Systems: HMD and CAVE." In *Augmented Reality, Virtual Reality, and Computer Graphics*, edited by Patrick Bourdot and Lucio Tommaso De Paolis, 148–61. (Cham, Switzerland: Springer International, 2018). https://doi.org/10.1007/978-3-319-95270-3_10.

Gibagadinamaagoom. "Thunderbird." University of Pennsylvania. Accessed March 25, 2021. https://ojibwearchive.sas.upenn.edu/thunderbird-cultural-context.

Gies, Erica. "What Lichens Can Teach Us." *Scientific American*, January 29, 2020. https://blogs.scientificamerican.com/observations/what-lichens-can-teach-us/.

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

Gross, Lawrence W. *Anishinaabe Ways of Knowing and Being*. Farnham, Surrey, UK: Ashgate Publishing, 2014.

Haraway, Donna J. "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective." In *Simians, Cyborgs, and Women: The Reinvention of Women*, 181–202. New York: Routledge, 1991.

———. *When Species Meet*. Minneapolis: University of Minnesota Press, 2008.

Haraway, Donna, and Martha Kenney. "Anthropocene, Capitalocene, Chthulhucene. In *Art in the Anthropocene: Encounters Among Aesthetics, Politics, Environments and Epistemologies*, edited by Heather Davis and Etienne Turpin, 255–70. London: Open Humanities Press, 2015.

Harman, Graham. *Tool-Being: Heidegger and the Metaphysics of Objects*. Chicago: Open Court, 2002. ProQuest Ebook Central.

Hayles, N. Katherine. *How We Became Posthuman: Virtual Bodies In Cybernetics, Literature, and Informatics*. Chicago: University of Chicago Press, 1999.

———. "Simulated Nature and Natural Simulations: Rethinking the Relation between the Beholder and the World." In *Uncommon Ground: Rethinking the Human Place in Nature*, edited by William Cronon, 409–25. New York: W.W. Norton, 1996.

Hearn, Jeffrey. Review of *Reinventing Nature? Responses to Postmodern Deconstruction*, edited by Michael E. Soulé and Gary Lease. *Science* 269, no. 5222 (July 21, 1995): 422–23.

Hedin, Grey, and Ann-Sofie N. Gremaud, eds. *Artistic Visions of the Anthropocene North: Climate Change and Nature in Art*. London: Routledge, 2018.

Heim, Michael. 1993. *The Metaphysics of Virtual Reality.* Oxford: Oxford University Press, 1993.

Hellstein, Valeria. "De Kooning's Embodied Vision and Abstract Expressionism in the 1960s." *Women Singing II 1966 by Willem de Kooning*. Tate Research Publication, 2017. Accessed November 6, 2025. https://www.tate.org.uk/research/in-focus/women-singing-ii/de-koonings-embodied-vision.

Herr, Chelsea M. "The Evolution of Revolution: Virgil Ortiz's Pueblo Revolt 1680/2180 as an Assertion of Native Presence Through Indigenous Futurisms." *World Art* 9, no. 2 (2019): 125–41. https://doi.org/10.1080/21500894.2019.1604425.

Hertz, Betti-Sue. "Handwork: Digital Flows, and Contemporary Art Animation." In *Animated Painting*, 18–27. San Diego: San Diego Museum of Art, 2007.

Horkheimer, Max, and Theodor W. Adorno. *The Dialectic of Enlightenment: Philosophical Fragments*. Stanford: Stanford University Press, 2002.

Hume, Jeff. “6 Astonishing Moments from Amanda Strong’s Stop-Motion Short Film *Biidaaban*.” CBC Arts. June 25, 2019. https://www.cbc.ca/arts/6-astonishing-moments-from-amanda-strong-s-stop-motion-short-film-biidaaban-1.5188094.

IMDB. “Awards,” The Blue Planet. Accessed July 11, 2023. https://www.imdb.com/title/tt0296310/awards/.

Ingold, Tim. “Rethinking the Animate, Re-Animating Thought,” *Ethnos* 71, no. 1 (2011): 9–20. https://doi.org/10.1080/00141840600603111.

Ivakhiv, Adrian. “An Ecophilosophy of the Moving Image: Cinema as Anthrobiogeomorphic Machine.” In *Ecocinema Theory and Practice: Theory and Practice*, edited by Stephen Rust, Salma Monani, and Sean Cubitt, 98–105. London: Taylor & Francis, 2012.

Ivakhiv, Adrian J. *Ecologies of the Moving Image: Cinema, Affect, Nature*. Waterloo, ON: Wilfrid Laurier University Press, 2013.

Jackson, Elizabeth Linda. “Biidaaban: First Light.” Master’s thesis, York University, 2019. http://hdl.handle.net/10315/36250.

Jackson, Lisa. Interview by Kristen Berkeley. CKLB Radio 101.9 FM, 2018. https://soundcloud.com/cklbradio/lisa-jackson-interview-with-reporterhost-kristen-berkeley/.

Janzen, Janet. *Media, Modernity, and Dynamic Plants in Early 20th Century German Culture*. Leiden, Netherlands: Brill Rodopi, 2016.

Jay, Martin. “Scopic Regimes of Modernity.” In *Vision and Visuality*, edited by Hal Foster, 3–28. Seattle: Bay Press, 1988.

Jiang, Jeannette, Emily Peterson, and Robert Heimer. “COVID-19 Updated Data & Developments - March 23, 2020.” Yale School of Public Health, March 23, 2020. https://ysph.yale.edu/news-article/covid-19-updated-data-and-developments---march-23-2020/.

Johnson, Rhiannon. “Anishinaabe Artist’s New VR Experience Takes an Indigenous Futurist Look at Toronto.” CBC News, April 14, 2018. https://www.cbc.ca/news/indigenous/lisa-jackson-biidaaban-vr-future-toronto-1.4619041.

Jones, Steve. “Virtual.” In *New Keywords: A Revised Vocabulary of Culture and Society*, edited by Tony Bennett, Lawrence Grossberg, and Meaghan Morris, 367–9. Malden, MA: Blackwell, 2005.

Jordaan, Donrich W. “Antipromethean Fallacies: A Critique of Fukuyama's Bioethics.” *Biotechnology Law Report* 28, no. 5 (December 19, 2009): 577–590. https://doi.org/10.1089/blr.2009.991.

Juan, M. Carmen, and David Pérez. “Comparison of the Levels of Presence and Anxiety in an Acrophobic Environment Viewed via HMD or CAVE.” *Presence: Teleoperators and Virtual Environments* 18, no. 3 (2009): 232–48. https://doi.org/10.1162/pres.18.3.232.

Kimmerer, Robin Wall. *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge and the Teachings of Plants*. Minneapolis: Milkweed Editions, 2013.

———. “Corn Tastes Better on the Honor System.” *Emergence Magazine*, October 31, 2018. https://emergencemagazine.org/feature/corn-tastes-better/.

———. *Gathering Moss: A Natural and Cultural History of Mosses*. Corvallis: Oregon State University Press, 2003.

Kohn, Eduardo. *How Forests Think: Toward an Anthropology Beyond the Human*. Berkeley: University of California Press, 2013.

Korsmeyer, Carolyn. *Making Sense of Taste: Food and Philosophy*. Ithaca: Cornell University Press, 2002.

Kovach, Margaret. *Indigenous Methodologies: Characteristics, Conversations, and Contexts*. Toronto: University of Toronto Press, 2009.

Krieger, Martin H. “What’s Wrong with Plastic Trees?” *Science* 179, no. 4072 (Feb. 2, 1973): 446-455.

Kull, Kalevi. “Umwelt and Modelling.” *The Routledge Companion to Semiotics*, edited by Paul Cobley, 43–56. London: Routledge, 2010.

Lawrence, Anna M. “Listening to Plants: Conversations Between Critical Plant Studies and Vegetal Geography.” *Progress in Human Geography* 46, no. 2 (2022): 629–51. https://doi.org/10.1177/03091325211062167.

Le Guin, Ursula K. “Paradises Lost.” In *The Birthday of the World and Other Stories*, 249–362. New York: HarperCollins, 2002.

Lettvin, J.Y., H.R. Maturana, W.S. McCulloch, and W.H. Pitts. “What the Frog’s Eye Tells the Frog’s Brain.” *Proceedings of the IRE* 47, no. 11 (1959): 1940-1951.

Library of Congress. “Brief Descriptions and Expanded Essays of National Film Registry Titles.” Accessed May 21, 2025. https://www.loc.gov/programs/national-film-preservation-board/film-registry/descriptions-and-essays/.

Linklater, Tanya Lukin. “Desirous Kinds of Indigenous Futurity: On the Possibilities of Memorialization.” In *Desire Change: Contemporary Feminist Art in Canada*, edited by Heather Davis, 149–68. Montreal: McGill-Queen’s University Press, 2017.

Little Bear, Leroy. “Jagged Worldviews Colliding.” In *Reclaiming Indigenous Voice and Vision*, edited by Marie Battiste, 77–85. Vancouver: University of British Columbia Press, 2000.

Lovejoy, Margot. *Digital Currents: Art in the Electronic Age*. New York: Routledge, 2004.

Maiorino, Giancarlo. “Linear Perspective and Symbolic Form: Humanistic Theory and Practice in the Work of L. B Alberti.” *Journal of Aesthetics and Art Criticism* 34, no. 4 (1976): 479–86. https://doi.org/10.2307/430582.

Marder, Michael. *Plant-Thinking: A Philosophy of Vegetal Life*. New York: Columbia University Press, 2013.

Marks, Laura U. *The Skin of the Film: Intercultural Cinema, Embodiment, and the Senses*. Durham: Duke University Press, 2000.

———. *Touch: Sensuous Theory and Multisensory Media*. Minneapolis: University of Minnesota Press, 2002.

Martinson, Harry. *Aniara: A Review of Man in Time and Space*. Ashland, OR: Story Line Press, 1999.

Massumi, Brian. *Parables for the Virtual: Movement, Affect, Sensation*. Durham: Duke University Press, 2021.

Mathews, Freya. “The Dilemma of Dualism.” In *Routledge Handbook of Gender and Environment*, edited by Sherilyn MacGregor, 54–70. Abingdon and New York: Routledge, 2017.

Matthews, Stephen N. and Louis R. Iverson. “Managing for Delicious Ecosystem Service under Climate Change: Can United States Sugar Maple (*Acer saccharum*) Syrup Production Be Maintained in a Warming Climate?”

International Journal of Biodiversity Science, Ecosystem Services & Management 13, no. 2 (June 18, 2021): 40–52. https://doi.org/10.1080/21513732.2017.1285815.

McGuffie, Joshua. "*Planet Earth II*: BBC (November 2016–January 2017) Television." *Journal of the History of Biology* 52 (2019): 505–07. https://doi.org/10.1007/s10739-019-09575-4.

Merchant, Carolyn. *The Death of Nature: Women, Ecology and the Scientific Revolution*. New York: HarperOne, 1989.

Merritt, Russell, and J.B. Kaufman. *Walt Disney's Silly Symphonies: A Companion to the Classic Cartoon Series.* Gemona, Italy: La Cineteca del Friuli, 2006.

Mestre, Daniel R. "CAVE versus Head-Mounted Displays: Ongoing thoughts." *IS&T International Symposium on Electronic Imaging: The Engineering Reality of Virtual Reality* (2017): 31–5. https://doi.org/10.2352/ISSN.2470-1173.2017.3.ERVR-094.

Mirzoeff, Nicholas. *The Right to Look: A Counterhistory of Visuality*. Durham: Duke University Press, 2011.

Monani, Salma. *Indigenous Ecocinema: Decolonizing Media Environments*. Morgantown, West Virginia University Press, 2024.

Monani, Salma, and Joni Adamson, eds. *Ecocriticism and Indigenous Studies: Conversations from Earth to Cosmos*. New York: Routledge, 2016.

Mondloch, Kate. *A Capsule Aesthetic: Feminist Materialisms in New Media Art*. Minneapolis: University of Minnesota Press, 2018.

———. *Screens: Viewing Media Installation Art*. Minneapolis: University of Minnesota Press, 2010.

Moore, Jason W. "The Capitalocene, Part I: On the Nature and Origins of Our Ecological Crisis." *The Journal of Peasant Studies* 44, no. 3 (2017): 594–630. https://doi.org/10.1080/03066150.2016.1235036.

Moore, Sam, and Alex Roberts. *The Rise of Ecofascism: Climate Change and the Far Right.* Cambridge, UK: Polity Press, 2022.

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

Nelson, Robert S. “Descartes’s Cow and Other Domestications of the Visual.” In *Visuality Before and Beyond the Renaissance*, edited by Robert S. Nelson, 1–21. Cambridge: Cambridge University Press, 2000.

New York State Office of Parks, Recreation and Historic Preservation. “Niagara Falls State Park.” Accessed May 30, 2025. https://parks.ny.gov/parks/46/.

Palmer, A. Laurie. *The Lichen Museum*. Minneapolis: University of Minnesota Press, 2023.

Palmer, Laurie. 2019. “The Lichen Museum.” In *Why Look at Plants? The Botanical Emergence in Contemporary Art*, edited by Giovanni Aloi. Leiden, Netherlands: Brill Rodopi, 2019, 149–151.

Panofsky, Erwin. “The History of Art as a Humanistic Discipline.” In *Meaning in the Visual Arts: Papers in and on Art History*, 1–25. Woodstock, NY: The Overlook Press, 1974.

Patrizio, Andrew. *The Ecological Eye: Assembling an Ecocritical Art History*. Manchester: Manchester University Press, 2020.

Payne, Alina. “Introduction.” In *Vision and Its Instruments: Art, Science, and Technology in Early Modern Europe*, edited by Alina Payne, 1–9. University Park: Pennsylvania State University Press, 2015.

Phelan, Peggy. “The Return of Touch: Feminist Performances, 1960–80.” In *Wack! Art and the Feminist Revolution*, edited by Lisa Gabrielle Mark, 346–61. Cambridge, MA: MIT Press, 2007.

Pitt, Hannah. “Questioning Care Cultivated through Connecting with More-Than-Human Communities.” *Social & Cultural Geography* 19, no. 2 (2018): 253–74. https://doi.org/10.1080/14649365.2016.1275753.

Plumwood, Val. *Feminism and the Mastery of Nature*. London: Taylor & Francis Group, 1994.

———. “Nature, Self, and Gender: Feminism, Environmental Philosophy, and the Critique of Rationalism.” *Hypatia* 6, no. 1 (Spring 1991): 3–27. https://doi.org/10.1111/j.1527-2001.1991.tb00206.x.

Priestley, Jenny. “How a Triffid Captured *The Green Planet*.” TVBEurope. Updated January 17, 2022. https://www.tvbeurope.com/production-post/how-a-triffid-captured-the-green-planet.

Pringle, Anne. “Establishing New Worlds: The Lichens of Petersham.” In *Arts of Living on a Damaged Planet*, edited by Anna Tsing, Heather Swanson, Elaine Gan, and Nils Bubandt, G157–67. Minneapolis: University of Minnesota Press, 2017.

Puig de la Bellacasa, María. *Matters of Care: Speculative Ethics in More than Human Worlds*. Minneapolis: University of Minnesota Press, 2017.

Rabiger, Michael. *Directing the Documentary*. Burlington, MA: Focal Press, 2015.

Rabil, Albert, Jr. “Humanism: Renaissance.” In *New Dictionary of the History of Ideas*, edited by Maryanne Cline Horowitz, 1029–33 Detroit: Charles Scribner’s Sons, 2005.

Racette, Sherry Farrell. “*Tawâyihk*: Thoughts from the Places in Between,” *RACAR: Revue d’art canadienne / Canadian Art Review* 41, no. 1 (2016): 26-31. https://doi.org/10.7202/1037550ar.

Rancière, Jacques. *The Emancipated Spectator*. London: Verso, 2009.

———. *The Politics of Aesthetics*. London: Continuum, 2008.

Richards, Morgan. “Global Nature, Global Brand: BBC Earth and David Attenborough’s Landmark Wildlife Series.” *Media International Australia* 146, no. 1 (2013): 143–54. https://doi.org/10.1177/1329878X1314600118.

Richter, Lindsey. “Reimagining Vision in the Surrealist Cinepoem *L’Étoile de Mer*.” *Mosaic: An Interdisciplinary Critical Journal* 54, no. 1 (2021): 19–35. https://dx.doi.org/10.1353/mos.2021.0002.

Robinson, Dylan. *Hungry Listening: Resonant Theory for Indigenous Sound Studies*. Minneapolis: University of Minnesota Press, 2020.

Ross, Andrew. “Technology.” In *New Keywords: A Revised Vocabulary of Culture and Society*, edited by Tony Bennett, Lawrence Grossberg, and Meaghan Morris, 342–44. Malden, MA: Blackwell Publishing, 2005.

Roy, Deboleena. *Molecular Feminisms: Biology, Becomings, and Life in the Lab*. Seattle: University of Washington Press, 2018.

Rust, Stephen, Salma Monani, and Sean Cubitt. “Introduction: Ecologies of Media.” In *Ecomedia: Key Issues,* edited by Stephen Rust, Salma Monani, and Sean Cubitt, 1–14. London: Taylor and Francis, 2015.

Sekula, Allan. “The Instrumental Image: Steichen at War.” *Artforum*, December 1975. https://www.artforum.com/print/197510/the-instrumental-image-steichen-at-war-36049.

Spribille, Toby, Philipp Resl, Daniel E. Stanton, Gulnara Tagirdzhanova. “Evolutionary Biology of Lichen Symbioses.” *New Phytologist* 234, no. 5 (June 2022): 1566–82. https://doi.org/10.1111/nph.18048.

Shantz, Jeffrey. “Judi Bari and ‘The Feminization of Earth First!’: The Convergence of Class, Gender and Radical Environmentalism.” *Feminist Review* 70 (2002): 105–22. https://www.jstor.org/stable/1395973.

Shields, Rob. *The Virtual.* London: Routledge, 2003.

Simpson, Leanne Betasamosake. *As We Have Always Done: Indigenous Freedom through Radical Resistance*. Minneapolis: University of Minnesota Press, 2017.

———. “caribou ghosts & untold stories.” In *This Accident of Being Lost: Songs and Stories*, 33–4. Toronto: House of Anansi Press, 2017.

———. “The Gift is in the Making.” In *The Gift Is in the Making: Anishinaabeg Stories*, 85–93. Winnipeg: Portage & Main Press, 2013.

———. “Plight.” In *This Accident of Being Lost: Songs and Stories*, 5-8. Toronto: House of Anansi Press, 2017.

———. “she told him 10 000 years of everything.” In *Islands of Decolonial Love: Stories and Songs*. Winnipeg: ARP Books, 2015.

Simpson, Leanne Betasamosake, Amanda Strong, Bracken Hanuse Corlett, and Whess Harman. President’s Dream Colloquium on Creative Ecologies: “*Biidaaban (The Dawn Comes)*.” Simon Fraser University, Vancouver, Canada, October 17, 2019. https://www.sfu.ca/gradstudies/life-community/news-events/events/pdc/2019-creative-ecologies/leanne-simpson.html.

Skylar, Robert. “The Making of Cultural Myths—Walt Disney.” In *The American Animated Cartoon: A Critical Anthology*, edited by Danny Peary and Gerald Peary, 58–65. New York: E.P. Dutton, 1980.

Soper, Kate. “The Humanism in Posthumanism,” *Comparative Critical Studies* 9, no. 3 (October 2021): 365–78. https://doi.org/10.3366/ccs.2012.006.

Soulé, Michael E. “The Social Siege of Nature.” In *Reinventing Nature?: Responses to Postmodern Deconstruction*, edited by Michael E. Soulé and Gary Lease, 137–70. Washington, DC: Island Press, 1995.

Spirn, Anne Whiston. “Constructing Nature: The Legacy of Frederick Law Olmsted.” In *Uncommon Ground: Rethinking the Human Place in Nature*, edited by William Cronon, 91–113. New York: W.W. Norton, 1996.

Sprinkle, Annie, Beth Stephens, and Jennie Klein. *Assuming the Ecosexual Position: The Earth as Lover*. Minneapolis: University of Minnesota Press, 2021.

Stalling, Carl. Interview by Michael Barrier, Milton Gray, and Bill Spicer. *Funnyworld* 13 (1971). https://web.archive.org/web/20241219035904/http://www.michaelbarrier.com/Funnyworld/Stalling/Stalling.htm/.

Strong, Amanda, and Leanne Betasamosake Simpson. “Amanda Strong and in Conversation.” Remai Modern, Saskatoon, Canada, January 26, 2019. https://www.remaimodern.org/field/watch-listen/amanda-strong-and-leanne-betasamosake-simpson-in-conversation.

Swanson, Heather, Anna Tsing, Nils Bubandt, and Elaine Gan. “Bodies Tumbled into Bodies.” In *Arts of Living on a Damaged Planet*, edited by Anna Tsing, Heather Swanson, Elaine Gan, and Nils Bubandt, M1–12. Minneapolis: Minnesota University Press, 2017.

Tanke, Joseph J. *Jacques Rancière: An Introduction*. London: Bloomsbury, 2011. ProQuest Ebook Central.

Tedford, Matthew Harrison. “Is a Non-Capitalist World Imaginable? Embodied Practices and Slipstream Potentials in Amanda Strong’s *Biidaaban*.” *Feminist Media Histories* 8, no. 1 (2022), 46–71. https://doi.org/10.1525/fmh.2022.8.1.46.

Todd, Zoe. “An Indigenous Feminist’s Take on the Ontological Turn: ‘Ontology’ Is Just Another Word for Colonialism.” *Journal of Historical Sociology* 29 (2016): 4–22. https://doi.org/10.1111/johs.12124.

Tsing, Anna Lowenhaupt. *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins*. Princeton: Princeton University Press, 2015.

Uexküll, Jakob von. *A Foray into the Worlds of Animals*. In *A Foray into the Worlds of Animals and Humans with A Theory of Meaning*, 41–138. Minneapolis: University of Minnesota Press, 2010.

van der Veen, Marijke. “The Materiality of Plants: Plant–People Entanglements.” *World Archaeology* 46, no. 5 (2014): 799–812, https://doi.org/10.1080/00438243.2014.953710.

Veth, Peter, Cecilia Myers, Pauline Heaney, and Sven Ouzman. “Plants Before Farming: The Deep History of Plant-use and Representation in the Rock Art of Australia's Kimberley Region.” *Quaternary International* 489: 26–45. https://doi.org/10.1016/j.quaint.2016.08.036.

Weintraub, Linda. *What’s Next? Eco Materialism & Contemporary Art*. Bristol, UK: Intellect, 2019.

Wells, Paul. *Animation and America*. New Brunswick, NJ: Rutgers University Press, 2002.

Whyte, Kyle P. “Indigenous Science (Fiction) for the Anthropocene: Ancestral Dystopias and Fantasies of Climate Change Crises.” *Environment and Planning E: Nature and Space* 1, no. 1–2 (March 2018): 224-42. https://doi.org/10.1177/2514848618777621.

Whyte, Kyle Powys. “Indigenous Women, Climate Change Impacts, and Collective Action.” *Hypatia* 29, no. 3 (Summer 2014): 599–616. https://doi.org/10.1111/hypa.12089.

Willoquet-Maricondi, Paula. “Shifting Paradigms: From Environmentalist Films to Ecocinema.” In *Framing the World: Explorations in Ecocriticism and Film*, edited by Paula Willoquet-Maricondi, 43–61. Charlottesville: University of Virginia Press, 2010.

Wolfe, Cary. *What Is Posthumanism?* Minneapolis: University of Minnesota Press, 2009.

World Health Organization. “WHO COVID-19 Dashboard.” Accessed May 15, 2025. https://data.who.int/dashboards/covid19/deaths?n=o/.

Wynter, Sylvia. “‘No Humans Involved:’ An Open Letter to My Colleagues.” In *Forum N.H.I. Knowledge for the 21st Century* 1, no. 1 (Fall 1994): 42–73.

———. “Unsettling the Coloniality of Being/Power/Truth/Freedom: Towards the Human, After Man, Its Overrepresentation—An Argument.” In *CR: The New Centennial Review* 3, No. 3 (Fall 2003): 257–337.

Yadav, Anupam. “Epistemology Revisited: A Feminist Critique.” *Journal of International Women’s Studies* 19, no. 6 (2018): 374–81. https://vc.bridgew.edu/jiws/vol19/iss6/24.

Zheng, Bo, Beth Stephens, and Annie Sprinkle. “A Conversation between Three Ecosexuals.” In *The Routledge Companion to Contemporary Art, Visual Culture, and Climate Change*, edited by T.J. Demos, Emily Eliza Scott, and Subhankar Banerjee, 164–72. New York: Routledge, 2021.

Zimmerman, Michael F., and Teresa A. Toulouse. “Ecofascism.” In *Keywords for Environmental Studies*, edited by Joni Adamson, William A. Gleason, and David N. Pellow, 64–68. NYU Press, 2016. https://www.jstor.org/stable/j.ctt15zc5kw.25.