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Inverted Landscapes:
Photomedia and the More-than-Representational

Rebecca Najdowski

ORCID ID: 0000-0002-0519-1366

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Abstract

The Anthropocene casts a long shadow over this project. *Inverted Landscapes: Photomedia and the More-than-Representational* is a response to the need, brought on by the climate crisis, to conceptualise nature differently. Composed of equal parts creative work and written exegesis, this practice-led PhD fractures the logic of pictorial and semiotic conventions of photomedia, forming inverted landscapes that contend with the material and political implications of visually representing the Anthropocene. Through undermining the material semblance and representational structures of photomedia depictions of nature, the imaging apparatus is exposed, bringing attention to how humans, non-human nature, and imaging technologies are entangled.

The creative outcome comprises three artistic projects: *Ambient Pressure*, *Surfacing*, and *Echo*, which were assembled as an exhibition, *Inverted Landscapes*. *Ambient Pressure* critiques how photomedia are used to frame and fix nature into an abstraction. To undermine the seemingly transparent objectification that occurs through photographic practices, artworks were made by physically modifying film and prints, adding occlusions during the film scanning process, and extending these material gestures into moving image. *Surfacing* enabled more-than-human agencies of natural phenomena and photo-materials to make artworks. To highlight correspondences between the geo-chemical materials of photomedia and earth processes, photographic film and paper was directly exposed to high-salinity environments and geothermal activities. *Echo* explored the affordances of photomedia by scanning botanical forms within environmental conditions that were beyond the imaging threshold of the technology. The resulting digital 3D models carry with them aesthetic aberrations that demonstrate data's fragility and instability, ruptures that expose the imaging apparatus.

Elaborating on posthumanist and new materialist conceptions of matter and agency, the exegesis analyses the artworks presented in the exhibition *Inverted Landscapes*. Media theory and ecocritical perspectives provide necessary context through which to understand the intensive correspondences between the Earth and imaging technologies. Using the writing and philosophical positions of Karen Barad, Jussi Parikka, and Gilles Deleuze and Félix Guattari, among others, the exegesis forms an argument for a more-than-representational approach to photomedia-based creative practice. This thesis proposes that unsettling representational constructs, enabling more-than-human agencies, and attending to the analogue and digital material of photomedia are generative processes for creative practice.

Consequently, the material, political, and conceptual entanglements of nature and photomedia materialise through the artworks. By haptically manipulating conventional landscape imagery, enmeshing photo-materials with natural phenomena, and harnessing the limitations of digital 3D scans of flora, my research imagines new relationalities between nature, culture, and technology. I argue that the more-than-representational research used throughout this project contributes to a reconfiguring of how nature is conceptualised. The necessary perspective shift in contending with, and responding to, the climate crisis enlivens and shapes this project.

Declaration

This is to certify that

(i) the thesis comprises only my original work towards the Doctor of Philosophy except where indicated in the preface,

(ii) due acknowledgement has been made in the text to all other material used,

(iii) the thesis is 34,379 words in length, exclusive of tables, maps, bibliographies and appendices.

Rebecca Najdowski

Preface

This research project was supported by the Faculty Graduate Research Fund in 2019.

Some parts of this thesis were published during candidature:

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Najdowski, Rebecca. "The Analogue: Photography as an Analogy for Earth Processes." *Fusion Journal* 10 (2016): 267-278.

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Figure 11. Diagram illustrating the patterns created by a wave encountering a barrier with two gaps. The two overlapping patterns create an interference pattern. Illustration: Vivian Cooper Smith. P. 31.

Figure 12. Diagram illustrating an interference pattern from two diffraction patterns interacting. Illustration: Vivian Cooper Smith. P. 32.

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Elements of this research project were made in varying locations across the globe. Many of these places are contested lands, and I recognise that I have benefited from settler colonialism. This thesis was produced on the lands of the Boon Wurrung and Wurundjeri peoples of the Kulin Nation. I pay my respect to Indigenous Elders past, present, and emerging. I wish to acknowledge them as Traditional Owners and acknowledge that Indigenous sovereignty has never been ceded.

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Introduction

A Picturesque Background

In the time that I have worked on this research, every year or so a different Californian landscape refreshes as the backdrop to my thoughts, sketches, image and video files, documents, notes, and back-burner projects (Fig. 1). Images of Yosemite, the High Sierras, and Death Valley cycle through as macOS upgrades; providing majestic scenes that glow ever-present. The Nature depicted on my computer screen has been colonised by the American project. These landscapes embody myths of the “untouched” beauty of California, conjuring notions of manifest destiny, abundant resources, and American exceptionalism as seen through the lens of technological innovation.¹ Photography has long been a tool of colonisation² — of lands, peoples, concepts, and nature.

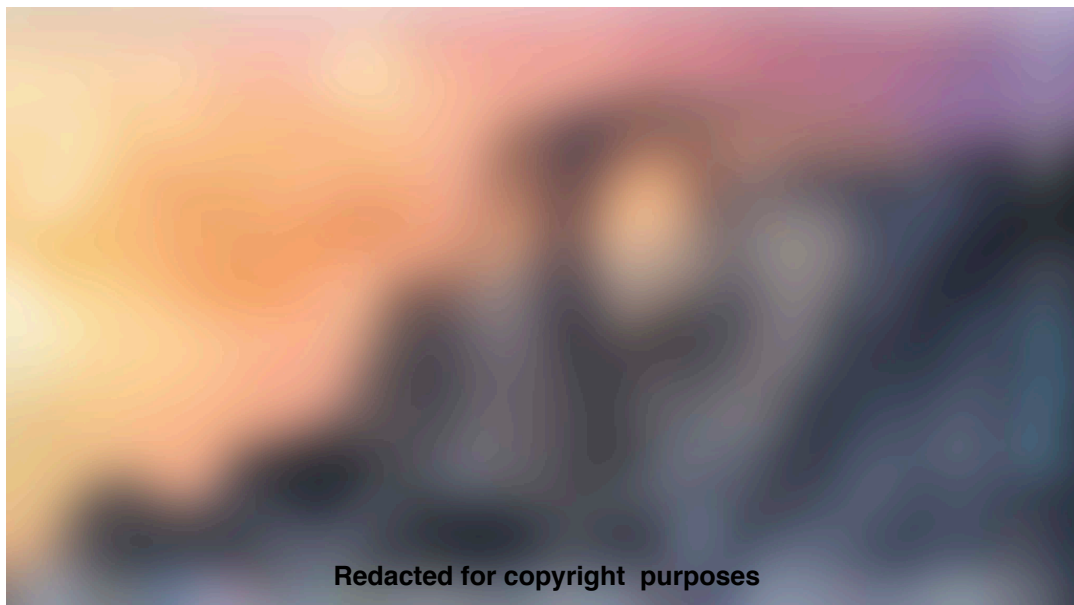


Figure 1. Screenshot of the artist's computer desktop.

The genesis of this PhD project began when I was an artist fellow at the Center for Creative Photography (CCP) in Tucson, Arizona, from 2013 to 2014. The archive houses photographs that are the symbolic antecedent to the landscape images that Apple uses to exemplify its brand. Founded in 1975, the CCP became a repository for canonical photographs after a meeting between Ansel Adams, the modernist landscape

-
- ¹ Deborah Bright has claimed that “landscape art is the last preserve of American myths about Nature, Culture, and Beauty.” Deborah Bright, “Of Mother Nature and Marlboro Men: An Inquiry Into the Cultural Meanings of Landscape Photography,” in *The Contest of Meaning: Critical Histories of Photography*, ed. Richard Bolton, (Cambridge, MA: MIT Press, 1989), 140.
 - ² James Ryan, *Picturing Empire: Photography and the Visualization of the British Empire* (Chicago: University of Chicago Press, 1997).

photographer, and University of Arizona President John Schaefer.³ Adams is known for his epic black and white images of the American West, free from evidence of human presence and drenched in romantic sublimity. The macOS default wallpaper images are the colourful heir to Adams's pristine landscapes. While making a body of work for the CCP collection, I took issue with depictions of the American West that Adams's work epitomised. Through their unreal perfection, a gap between me and the land "out there" became a chasm. I sought to work against the kind of landscape photography exemplified by Adams and to present a new perspective of a region that had been photographed so thoroughly by other modernist canonical photographers like Edward Weston, Frederick Sommer, and more recently Richard Misrach. I took the position that these representations of nature are inadequate. Through the project for the CCP, I began challenging the pictorial conventions of landscape photography of the American West by experimenting with photographic materiality (Fig. 2). This critique has developed into a deeper and broader inquiry into photomedia representations of nature and the possibilities for new artworks about nature that are materially and conceptually expansive.

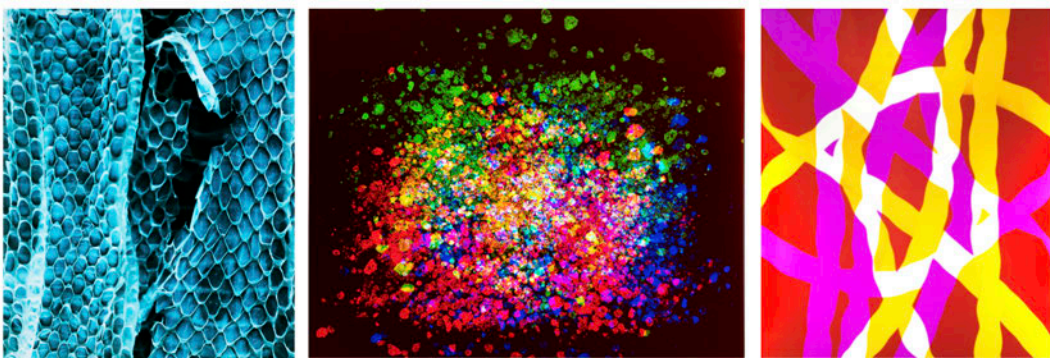


Figure 2. Rebecca Najdowski, photographs from the series *Desert Pictures*, 2014–2015, chromogenic photograms of animals, minerals, and plants, approx. 51 × 61 cm (20 × 24 in) each.

Ultimately, this research is concerned with how nature is conceptualised through photography, video, and 3D scanning. These imaging technologies, possible through the recording of light, are what I call "photomedia" throughout this writing. Photomedia is a material condition in which patterns of energy appear within its mineral compositions and analogue and digital processes. It is also a process that objectifies what it images. My aim through this work is to undermine the limiting features of photomedia, to draw attention to them, to open up new perspectives on nature. I use the word "undermine" here because of the association with the Earth — undermining is about unsettling from

³ Center for Creative Photography, "About Us," accessed January 3, 2020, <https://ccp.arizona.edu/about-us-0>.

below the superficial layers. Curator, writer, and activist, Lucy Lippard, titled her book *Undermining* because of its literal implication, and my research shares its sentiment:

undermining literally — as in pits and shafts that reflect culture, alter irreplaceable ecosystems, and generate new structures; undermining's physical consequences, its scars on the human body politic; undermining as what we are doing to our continent and to the planet when greed and inequity triumph; undermining as a political act — subversion is one way artists can resist.⁴

It is through undermining restrictive representational structures of photomedia — which frame, objectify, and abstract nature — that I aim to understand how culture, technology, and nature are dynamically entangled in photomedia processes. Because photomedia is generated through an indexical means, they carry an appearance of transparency and neutrality. However, photomedia of non-human nature, like the macOS depictions of Yosemite, the High Sierras, and Death Valley, are culturally inscribed constructions. My inquiry, therefore, began with the question: *How can photomedia — a tool for framing, objectifying, and abstracting nature — be undermined to imagine new relationalities between culture, technology, and more-than-human nature?*

The possibility of undermining material semblance and representational structures of photomedia depictions of nature was examined through artistic field and studio research and the written research of the exegesis. Throughout my candidature, artistic investigations were carried out alongside writing advancements that registered shifts and developments within my thinking. The artistic research involved the production of a significant body of work that approached the central question through several material experiments. Using both analogue and digital photomedia, I explored ways in which I could enable non-human agencies of photographic processes and materials, as well as environmental forces and conditions, to produce artworks. The written exegesis details the material, philosophical, and theoretical groundwork of the artistic explorations. I draw upon materialist philosophers, media theorists, and others to develop a working methodology that speculates on the possibility of *more-than-representational* creative practice. In this exegesis, I will elaborate on how I have come to see the ways that culture, technology, and more-than-human nature are entangled and co-emerging.

nature, Nature, and Landscape

Throughout this writing, I use a few terms that are related, but not interchangeable: nature, Nature, and landscape. When I use the word “nature,” I refer to non-human nature. A nature prior to our mental construction of it. Nature with a capital “N” is a

⁴ Lucy Lippard, *Undermining: A Wild Ride Through Land Use, Politics, and Art in the Changing West* (New York: The New Press, 2006), 3.

version that is conceived of through a human filter; it is restricted and abstracted. *Nature* is mythologised nature. *Nature* is “just like a reflection, we can never actually reach it and touch it and belong to it,” it is “a self-contained form suspended afar, shimmering and naked behind glass like an expensive painting.”⁵ Photography has played a significant part in the framing and distancing of nature into *Nature*.

I use “landscape” as a loaded, historical, cultural term. Landscape implicates the human. We might think of landscape as the manifestation of the human conceptualisation of nature. The landscape image “is a selected and constructed text”⁶ and is a form of *Nature*. Landscape implies something that is fixed, compared to the liveliness and flux of the world. From physically shaping the land or terrain, to conceptually shaping it, at the centre of landscape stands the human. For this exegesis, “landscape” is an ideal term because it is colloquially used and culturally heavy. This is the place from which I am working against. I am ultimately concerned with *nature*, how it is abstracted as *Nature* and contained within a fixed and static landscape.



Figure 3. Timothy O’Sullivan, “Karnak” Montezuma Range, Nevada, 1867, albumen print, Plate 79 from: Geological Exploration of the Fortieth Parallel / United States Army Corps of Engineers. Courtesy of the Library of Congress, LC-DIG-ppmsca-11862.

There is a long history of nature representation through landscape photomedia, yet the conventional feature that persists is the picturesque. Early notable landscape photography was produced in the United States through commissions by the US

⁵ Timothy Morton, *The Ecological Thought* (Cambridge, MA: Harvard University Press, 2010), 5.

⁶ Bright, “Of Mother Nature and Marlboro Men,” 126.

Geological Survey. In this regard, Timothy O'Sullivan's images are the antecedent that establishes a relationship between photography and geophysical processes (Fig. 3). Photography was a tool for scientific study in the images of O'Sullivan, he recorded the landmasses and geological formations not for their aesthetic value as scenic locales, but with the motivation to provide a kind of knowledge of the Earth.⁷

In contrast, Ansel Adams, possibly the most well-known landscape photographer globally, was singularly preoccupied with the aesthetic value of a landscape photograph. Working in the first half of the twentieth century, the depth of his aesthetic fixation led him to develop the zone system, which enables the production of optimal tonal results in the exposure and printing of black and white photographs. The resulting visual precision could be considered the height of photographic modernism. Adams's photographs are extraordinarily beautiful, yet they eschewed depiction of the encroaching human development in the regions of the American West which he dedicated himself to photographing. The portrayal of these landscapes as majestic and exquisite by Adams and others, such as Eadweard Muybridge and Carlton Watkins, informed the collective perception of these environments as something to be admired, something worthy of protecting, and something precious and far off. It is important to emphasise that this sentiment prevails. While these notions developed in the modern era, the legacy is still evident in the often sublime quality of contemporary wilderness photography.⁸

As a counterpoint to the modern impulse to present non-human nature as precious and pristine, the 1975 landmark exhibition *New Topographics* brought together photographers who imaged the "man-altered landscape." Curated by William Jenkins, the exhibition at George Eastman House in Rochester, New York revealed a banality within urban sprawl. The cynical take on human-altered landscapes presented a shift from modern idealism to a postmodern instinct toward the derisive. This can be seen in Robert Adams's unsentimental views of suburban developments and track housing in the Colorado Front Range or Lewis Baltz's depictions of stark industrial parks in California.

In the contemporary sphere, perhaps the most regarded landscape photography combines these two impulses: rendering a scene strikingly sublime and imaging human activity within natural environments. Edward Burtynsky's work is a notable example; his images depict vast landscapes carved out and mutilated by human intervention, the effects of seeking resources for manufacturing and energy needs. It has been argued that

⁷ Rosalind Krauss, "Photography's Discursive Spaces: Landscape/View," *Art Journal*, no. 4 (1982): 311-319, <https://doi.org/10.2307/776691>.

⁸ The photography of Peter Dombrovskis is a prominent example in the Australian context. See also the discussion in Rebecca Solnit, "Uplift and Separate: The Aesthetics of Nature Calendars," in *As Eve Said to the Serpent: On Landscape, Gender, and Art* (Athens: University of Georgia Press, 2001), 200-205.

this kind of landscape representation is problematic by its very sublimity.⁹ Many of Burtynsky's photographs, and others like them, not only reinforce non-human nature as distanced and awe-inspiring, but they also link environmental violence to those qualities. Daniel Palmer addresses the challenges of photographic representation of climate change, suggesting that what he calls the "sublime image of disaster" has to do with photography itself: "to be sure, the medium of photography — at least in its traditional, unmanipulated forms — is limited by its temporality of what is or 'has been,' rather than what *may be*."¹⁰ In part, because of this indexical limitation of the photographic medium, Palmer argues, as I do, that there is a "need for a more complex understanding of 'nature'" in the face of the climate crisis.¹¹

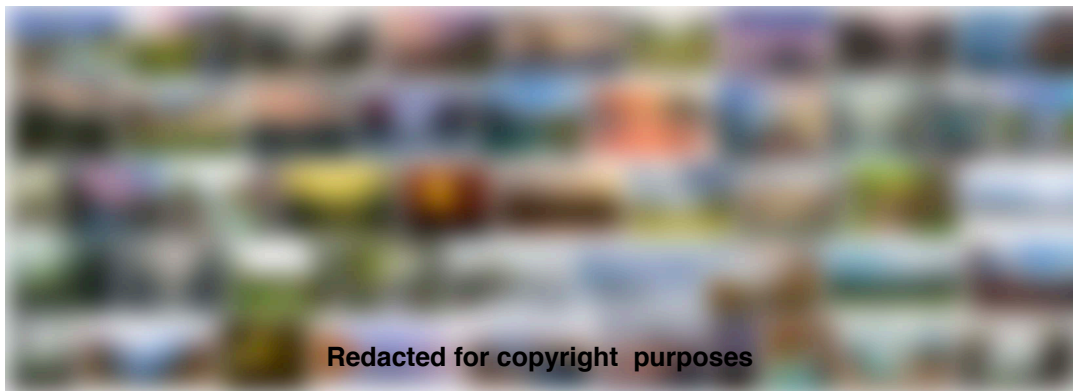


Figure 4. Screenshot of Google Image search for "landscape," 22 July 2018.

Through taking and consuming photographs and videos, humans have developed a deeply complicated relationship with photomedia. The photomedia produced give visual definition to the world, crafting how we think of and understand our surroundings. These images build upon the extended apparatus of photomedia. Through the vast and ongoing archive of photo-images, a self-referential script of codes and meanings is established.¹² A simple Google image search for "landscape" highlights the conventions (Fig. 4). The top search hits have similar characteristics which carry cultural meaning. The vistas are awash in bright jewel tones, water is satin-smooth or glass-like, landforms are mostly unpopulated by humans, and visual evidence of human existence lends to an impression of harmony. As Liz Wells asserts in *Land Matters*:

⁹ T. J. Demos, *Against the Anthropocene: Visual Culture and Environment Today* (Berlin: Sternberg Press, 2017), 62–68.

¹⁰ Daniel Palmer, "Photography, Technology, and Ecological Criticism," in *Beyond the Sublime Image of Disaster*, eds. Libby Lester and Brett Huchens (New York: Peter Lang, 2013), 80.

¹¹ For Palmer, a move from the "sublime image of disaster" could be found in photomedia projects that deal with issues related to climate change by employing the potentialities of networked and performative photography. Palmer, "Photography, Technology, and Ecological Criticism," 82–89.

¹² The Instagram account "insta_reapeat" highlights this phenomena in the social media age. The feed brings together images of strikingly similar compositions, aesthetic treatments, and views. insta_repeat, *Instagram*, May 2, 2020, https://www.instagram.com/insta_repeat/.

The content of images may seem natural. But representational and interpretative processes are cultural in that they are anchored in aesthetic conventions. Photographs substitute for direct encounter; they act as surrogates, mediating that which was seen through the camera viewfinder. Visuality, that is, systems of seeing, operates through codes and conventionalised meanings.¹³

A feedback loop is created wherein the more our surroundings are photographed through a particular pictorial script, the more that becomes convention, reinforcing the script. These landscape images have power. They have come to be the visual filter through which humans “see” nature. As a conglomerate, they cast perceptions and understandings of our surroundings through controlled mediation of the visual features of our world.

Limits of Indexicality

A point of contention in this artistic research is the dominant theoretical discourse that has been focused on photography as a representational tool with a semiotic function; as an indexical sign maintaining a causal connection to the referent.¹⁴ While photomedia’s indexical nature has been understood and discussed within art and cultural criticism, my research deals with significant epistemological issues that also reside outside of this purview. The fixation on the index is problematic because it is so deeply ingrained in how humans see, use, and understand photomedia. The aim here is not to completely negate semiotics, but to explore how other models that take into account the complex unfolding of the material world, such as new materialism and posthumanism, might expand how photomedia can be used to comprehend the world.

The unique indexical link that photomedia have with their referent enables a sense of transparency and fidelity. We see through to the “that-has-been.”¹⁵ That iceberg existed. A wasp’s nest was this shape. This stream snaked through this valley. In this way, we come to know vast terrains and granular details of Earth through the camera’s vision, moulding how we visualise the planet. *The Blue Marble* is called up in our mind’s eye because we have seen photographs of Earth from space. As Roland Barthes calls photographs “emanation[s] of the referent,”¹⁶ fidelity to a visual appearance of the world

¹³ Liz Wells, *Land Matters: Landscape Photography, Culture and Identity* (London: I.B.Tauris, 2011), 6.

¹⁴ See, for example, Roland Barthes, “The Rhetoric of the Image,” in *Image, Music, Text*, trans. Stephen Heath (New York: Hill & Wang, 1977); Rosalind Krauss, “Notes on the Index: Seventies Art in America,” *October* 3 (1977): 68–81, <https://doi.org/10.2307/778437>; Rosalind Krauss, “Notes on the Index: Seventies Art in America. Part 2,” *October* 4 (1977): 58–67, <https://doi.org/10.2307/778480>; Tom Gunning, “What’s the Point of an Index?, or Faking Photographs,” *NORDICOM Review: Nordic Research on Media & Communication* 25 (2004): 39–49; and James Elkins, ed., *Photography Theory* (London: Routledge, 2006).

¹⁵ Roland Barthes, *Camera Lucida: Reflections on Photography*, trans. Richard Howard (New York: Hill & Wang, 1981), 80.

¹⁶ Barthes, *Camera Lucida*, 80.

forms our understanding of what surrounds us. In *A Geology of Media*, Jussi Parikka points out that: “our relations with the earth are mediated through technologies and techniques of visualization, sonification, calculation, mapping, prediction, simulation, and so forth: it is through and in media that we grasp earth as an object for cognitive, practical, and affective relations.”¹⁷ Photomedia is how we visualise it. While the indexical nature of photomedia provides a compelling tool for visualisation in this sense, it persists as a limited filter through which to comprehend the world.

Within the Context of the Anthropocene

The issues of visualising nature are intensified, like an inscription in neon, because human activities on Earth have become a geologic force. Within the relationship between landscape, Nature, and nature is the politics of representing the Anthropocene.

The Anthropocene, a geologic epoch proposed in 2000 by atmospheric chemist Paul Crutzen and biologist Eugene Stoermer, is marked by evidence of human activity within geologic strata (though Crutzen is credited with popularising the term).¹⁸ Many humanities scholars have taken up the concept as a way to provide some frame for the current conditions from which we live and think. Still, the universalising term “Anthropocene” itself is contested and alternatives have been proposed to grapple with our planetary predicament from postcolonial, feminist, and materialist positions; notably Donna Haraway’s “Chthulucene”, Jason Moore’s “Capitalocene”, and Jussi Parikka’s “anthrobscene.”¹⁹ There is significant value in these contestations and reframings, but, in this exegesis, I will stick with the Anthropocene as the term most used in popular discourse. The Anthropocene is a distributed moment, historical and situated within “The Great Acceleration” of our time, and vastly and fractally reverberating into the future.

In October 2018, the Intergovernmental Panel on Climate Change (IPCC) released a report analysing more than 6,000 studies on climate change.²⁰ The report paints a dire picture for the future inhabitants of Earth should the current situation regarding rising temperatures not be remediated. At the current rate, by 2040 the atmosphere will likely warm up to 1.5 degrees Celsius above pre-industrial levels. The damage brought on by this global temperature rise includes intensifying droughts, wildfires, floods, massive die-

¹⁷ Jussi Parikka, *A Geology of Media* (Minneapolis: University of Minnesota Press, 2015), 12.

¹⁸ Paul Crutzen and Eugene Stoermer, “The ‘Anthropocene,’” *Global Change Newsletter*, 41 (2000): 17–18; Paul Crutzen, “Geology of Mankind,” *Nature* 415, no. 6867 (2002): 23, <https://doi.org/10.1038/415023a>.

¹⁹ Donna Haraway, *Staying with the Trouble: Making Kin in the Chthulucene* (Durham: Duke University Press, 2016); Jason Moore, ed., *Anthropocene or Capitalocene?: Nature, History, and the Crisis of Capitalism* (Oakland: PM Press, 2016); Jussi Parikka, *The Anthrobscene* (Minneapolis: University of Minnesota Press, 2014).

²⁰ The Intergovernmental Panel on Climate Change, “Special Report: Global Warming of 1.5 °C,” October 2018, <https://www.ipcc.ch/sr15/>.

offs of coral, rising seas, and disruption to migration patterns. All which have a rippling-out of consequences for ecosystems, human communities, and economies. The Anthropocene is here, and it is palpable. As a collective, humans have not been able to contend with the arising issues that have developed out of our own activity with any significant improvements to this predicament. What is undeniably clear is the way that we think and the way that we act has not been working. A different approach is needed.

In the face of the Anthropocene, as dystopian sci-fi merges with romantic ideals of nature. Robert Macfarlane diagnoses that, for art, “old forms of representation are experiencing drastic new pressures and being tasked with daunting new responsibilities.”²¹ Emerging from a concern for the ways that nature has been visualised, this research recognises the need for a shift in perspective to better respond to the effects of the Anthropocene.

The problems that my creative research confront are interrelated:

1. Photomedia filters and restricts nature, it abstracts it into Nature;
2. Landscape and nature photography are devices that create distance between humans and non-human nature;
3. These phenomena, in turn, impact how humans conceptualise nature;
4. And, in turn, this relates to our actions/inactions in the face of the Anthropocene.

My work aims to embody a refiguring of human/non-human nature relationships through photomedia, to offer methods that contribute to a shift in consciousness required to contend with the Anthropocene.

Theoretical Frameworks and Methodological Approaches

This research is situated among media studies, posthuman and new materialist thought, ecocritical perspectives, and visual art.

Media studies became a useful field of research as I began to consider more deeply the material of photographic technologies. The media archeological strain of media studies provided a process of excavation or a close-reading of the tools and technologies used in this creative research. The notions of apparatus, time, transformation, and meaningful minutia are all brought forth in my research from the perspective of media studies. Jussi Parikka and Vilém Flusser are the central media theorists that I have called upon to support my research.

²¹ Robert Macfarlane, “Generation Anthropocene: How Humans Have Altered the Planet For Ever,” *The Guardian*, April 1, 2016, <https://www.theguardian.com/books/2016/apr/01/generation-anthropocene-altered-planet-for-ever>.

In direct contrast to framed and fixed Nature as structured through photomedia representations, this research engages with new materialist and posthumanist scholarship. In particular, these perspectives rely on a material world that is open, un-fixed, and dynamic. New materialism and posthumanism reject the human as the centre of everything; placing emphasis on examining and allowing forms of knowledge to rise out of non-human matter and activities.²²

New materialism is a turn toward matter as a response to poststructuralism's focus on texts and discourses. Within this field of thought, the materialities considered are diverse and include environments, ecologies, systems, biological and non-biological entities, gravity, time, other features of physics, and human constructs like the social, cultural, and psychological. A defining characteristic of new materialism is an emphasis on the agency of matter. Matter itself is lively and vibrant.²³ A separation of the realms of nature and culture, mind and matter, theory and practice are rejected within new materialism. Instead, it is about a multiplicity of becomings. Importantly, new materialist scholarship is a critical engagement in which "the nature of, and relationship between, the material details of everyday life and broader geopolitical and socioeconomic structures is being explored afresh."²⁴

New materialism is positioned within a broader posthuman field of inquiry and experimentation. Distinct from "posthuman" figures such as cyborgs, zombies, and ghosts, the social discourse of posthumanism is steeped in "the pressing contemporary question of what it means to be human under the conditions of globalization, technoscience, late capitalism and climate change."²⁵ Critical posthumanism is essential to my research because it combines a post-anthropocentric position with a posthuman one, where the critique of species hierarchy from post-anthropocentrism merges with the critique of a universal "Man" as representative of the human.²⁶ Posthumanism is involved in ongoing questions around technology, redefining the relationship between humans and technology. At the same time, it also pushes "the nature–cultural continuum further, introducing terms such as 'medianatures', 'ecomaterialism' and 'makehuman' to

²² Rosi Braidotti, *The Posthuman* (Cambridge, UK: Polity Press, 2013); Rosi Braidotti, "Posthuman Critical Theory," *Journal of Posthuman Studies* 1, no. 1 (2017): 9–18, <https://doi.org/10.5325/jpoststud.1.1.0009>; Rosi Braidotti and Maria Hlavajova, eds., *Posthuman Glossary* (London: Bloomsbury Academic, 2018); Diana Coole and Samantha Frost, eds., *New Materialisms: Ontology, Agency, and Politics* (Durham: Duke University Press, 2010); Rick Dolphijn and Iris van der Tuin, eds., *New Materialism: Interviews and Cartographies* (Ann Arbor: Open Humanities Press, 2012).

²³ Jane Bennett, *Vibrant Matter: A Political Ecology of Things* (Durham: Duke University Press, 2010).

²⁴ Diana Coole and Samantha Frost, "Introducing the New Materialisms," in *New Materialisms: Ontology, Agency, and Politics*, eds. Diana Coole and Samantha Frost (Durham: Duke University Press, 2010), 7.

²⁵ Stefan Herbrechter, "Critical Posthumanism," in *Posthuman Glossary*, eds. Rosi Braidotti and Maria Hlavajova (London: Bloomsbury Academic, 2018), 94.

²⁶ Braidotti, *The Posthuman*; Rosi Braidotti, "Posthuman Critical Theory;" Braidotti and Hlavajova, *Posthuman Glossary*.

replace the old divides.”²⁷ Posthuman is not really *after* human or *against* human, instead, to be posthuman “implies a new way of combining ethical values with the well-being of an enlarged sense of community, which includes one’s territorial or environmental interconnections.”²⁸

My project ascribes to an amplified notion of agency via new materialism wherein material agency is a flux of multiplicitous becomings, and importantly, these enactments expand into the realm of the non-human.²⁹ Karen Barad’s theory of “agential realism” is foundational because it emphasises that “matter does not refer to a fixed substance; rather, matter is substance in its intra-active becoming — not a thing but a doing, a congealing of agency.”³⁰ Barad argues that intra-action reworks causality in that “distinct agencies do not precede, but rather emerge through, their intra-action.”³¹ Agencies, entities, and events are not individual elements; they are only “distinct” in their relational entanglement, not in an absolute sense.³² This radical understanding of matter and agency stood out as a compelling framework from which to scaffold a new perspective of photomedia.

Philosophy, science studies, art studies, cultural theory, and creative practices, among other fields, have benefited from the expansive thinking ushered in by the material and posthuman turn. Emphasising matter’s agency moves away from the outlook that meaning is something imprinted on matter. Within the arts, the inseparability of matter and meaning is foregrounded. For instance, as Rick Dolphijn and Iris van der Tuin explain, “a new materialist perspective would be interested in finding out how the form of content (the material condition of the artwork) and the form of expression (the sensations as they come about) are being produced in one another.”³³ Studying entanglements of materiality and meaning is one aspect that has led to significant development of new materialist and posthumanist perspectives within creative practices and arts studies. In this realm, artists and researchers attend to the liveliness — gooey spillages and dusty dissolves — of materialities, processes, practices, and art

²⁷ Braidotti and Hlavajova, *Posthuman Glossary*, 8.

²⁸ Braidotti, *The Posthuman*, 190.

²⁹ For a definition, see Jeffrey Scott Marchand, “Non-Human Agency,” in *Posthuman Glossary*, eds. Rosi Braidotti and Maria Hlavajova (London: Bloomsbury Academic, 2018), 292–295.

³⁰ Karen Barad, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning* (Durham: Duke University Press, 2007), 151.

³¹ Barad, *Meeting the Universe Halfway*, 33.

³² Karen Barad, “Quantum Entanglements and Hauntological Relations of Inheritance: Dis/Continuities, SpaceTime Enfoldings, and Justice-to-Come,” *Derrida Today* 3, no. 2 (November 2010): 267, <https://doi.org/10.3366/E1754850010000813>.

³³ Dolphijn and van der Tuin, *New Materialism*, 91.

encounters.³⁴ Central to new materialism and posthumanism, especially in relation to the arts, is “affect.” Brian Massumi proposes that affect is intensity that follows “different logics and pertain to different orders” than emotion.³⁵ Emotion is “subjective content” that is “semantically and semiotically formed,” “intensity owned and recognized”; in contrast, affect “is not ownable or recognizable.”³⁶ A great deal of what new materialism and posthumanism propose is not ownable or entirely recognisable; the indeterminate openness drew me into this way of thinking and making.

Photomedia has become, in many ways, a practice that appears to be ownable and recognisable. A fixed object (externally imprinted with meaning). For this reason, new materialism and posthumanism can offer productive movements away from purely representational and semiotic approaches to making and studying photography. To date, much of the research in this space has been concerned with post-digital conditions and developments of non-human photography in which there is no human operator. The theoretical work of Joanna Zylińska and Daniel Rubinstein are notable exceptions within photography’s relationship to critical posthumanism.³⁷ Moreover, photo-based projects concerned with issues around the Anthropocene have primarily been within the realm of editorial photo-essays or documentary approaches that record evidence of disastrous causes and effects of climate change. In contrast, my research occupies a space in which new materialist and posthumanist approaches to photomedia are used to reconfigure perceptions of non-human nature through artistic strategies. Instead of documenting causes and effects of the anthropogenic condition, the material experiments discussed in this exegesis create conditions in and of themselves which speak to ways of thinking and relating to non-human nature.

Throughout the creative research, I used experimental techniques to upend material and conceptual frameworks within photomedia. My methods were directed toward undermining representational constructs through material processes: I manipulated the physical structures of analogue photography and the semblance of data within digital 3D modelling. At the same time, other co-current techniques mobilised the agencies within an environment to generate aesthetic gestures within photomedia. Blending photomedia

³⁴ For discussions on creative practice and new materialism see, for example, Estelle Barrett and Barbara Bolt, eds., *Carnal Knowledge: Towards a ‘New Materialism’ through the Arts* (London: I.B. Tauris, 2013); Katve-Kaisa Kontturi, *Ways of Following: Art, Materiality, Collaboration*, (London: Open Humanities Press, 2018); Kate Mondloch, *A Capsule Aesthetic: Feminist Materialisms in New Media Art* (Minneapolis: University of Minnesota Press, 2018); and Jussi Parikka, “Earth Forces: Contemporary Land Arts, Technology and New Materialist Aesthetics,” *Cultural Studies Review* 21, no. 2 (November 2015): <https://doi.org/10.5130/csr.v21i2.4317>.

³⁵ Brian Massumi, *Parables for the Virtual: Movement, Affect, Sensation* (Durham: Duke University Press, 2002), 27.

³⁶ Massumi, *Parables for the Virtual*, 27–28.

³⁷ Joanna Zylińska, *Nonhuman Photography* (Cambridge, MA: MIT Press, 2017); Daniel Rubinstein, “Posthuman Photography,” in *The Evolution of the Image Political Action and the Digital Self*, eds. Marco Bohr and Basia Sliwinska (New York: Routledge, 2018).

practice and theory with new materialism and posthumanism, I developed a practical and speculative research methodology for creative practice that I have come to call “more-than-representational.”³⁸ My research supports the view that it is necessary to use representational systems themselves in order to critique their consequences. So as a research style, more-than-representational works from within representation to make visible overarching representational systems. The methods used acknowledge and harness multiple registers of thought, including sign and signification, and affect and sensation. Other techniques also enable non-human agencies within the materialities and practices of photomedia. For my work in particular, enabling non-human agencies is also extended to more-than-human nature. Significantly, more-than-representational aims to convey relationalities between nature, culture, and technology.

Chapter Summary

The first chapter, “Framing,” begins by directly probing conventional landscape photography as a way to address issues of representation and conceptualisation of nature. In this chapter, I outline some of the critical issues with representing nature through photomedia and detail my artistic investigation into possible ways to unsettle these representations. One of the aspects that my research problematises is the apparent transparency, neutrality, and fixity of photomedia as technological tools. I sought to critique these issues within photographic representations of nature specifically by developing methods and techniques of undermining the material structure of photo-materials.

Ambient Pressure is a series of photo-works created through physical manipulations of film negatives, the incorporation of visual obstructions during the film scanning process, physical modifications to printed images, and video collages. Through a process of manipulating the nature images, I aimed to fracture the logic of the photographic frame as something neutral and invisible. My methods were influenced by non-representational research styles, as they seek to “render rather than represent, to resonate rather than validate, to rupture and reimagine.”³⁹ In making *Ambient Pressure*, I began to compose a provisional elaboration of more-than-representational research. My speculative methodology — a way of making and thinking within photomedia creative practice — picks up features as I progress through the artistic experiments of this research.

³⁸ More-than-representational was inspired by and developed out of non-representational research. Nigel Thrift, *Non-Representational Theory: Space, Politics, Affect*, (London: Routledge, 2008); Phillip Vannini, *Non-Representational Methodologies: Re-Envisioning Research*, ed. Phillip Vannini (New York: Routledge, 2015).

³⁹ Phillip Vannini, “Non-Representational Research Methodologies: An Introduction,” in *Non-Representational Methodologies: Re-Envisioning Research*, ed. Phillip Vannini (New York: Routledge, 2015), 15.

In the second chapter, “Agencies,” I examine how human and non-human agency can be enacted in the production of photomedia by discussing artistic experiments in which I enmeshed photo-materials with the forces and composition of the Earth. *Surfacing* began as I explored the possibilities of generating material encounters between light-sensitive film and paper and high-salinity environments and geothermal actives. I was interested in discovering how working deliberately with the material agencies of photomedia and natural phenomena could provide insights to both photography and the forces rendered. To do this involved what might be described as “more-than-human,” where “the materialities involved have their own active role in the process; they are not mastered by the artist alone.”⁴⁰

Through camera-less methods and analogue materials, I sought to reveal matter as a “congealing of agency” and a “dynamic articulation/configuration of the world.”⁴¹ I followed the flows of both natural phenomena and photographic materials to uncover correspondences between them. Visually inscribed on the surfaces of the images are aspects of earth processes, like minerals, time, and transformation. *Surfacing* undermines the implicit distancing of nature in conventional landscape photographs. I take up a critically intimate approach to create the artworks. However, I also use critical intimacy to look at how photo-materials, history and culture of photography, and geologic elements are an entanglement of relations in this project.

The third chapter, “Affordances and Thresholds,” explores the aesthetic and conceptual potential of digital affordances and thresholds. With an understanding of the imaging limitations of my digital 3D scanner in uncontrolled lighting conditions, I purposely made recordings of plants at the edge of viability. When it comes to visually translating depictions of botanicals outdoors, the sensor engineered to capture the colour, surface, and dimension of forms and render them as digital 3D objects inherently fails. In this chapter, I propose that pushing a system over the threshold of its designed affordances allows for a better understanding of the system or apparatus itself.

Echo is a series of 3D models generated from photogrammetric and depth scans of plants. Recorded in environmental conditions that exceeded the capacities of the scanner, the resulting artworks are digital botanical objects that carry with them visual glitches of their translation from physical to digital materiality. The aesthetic aberrations are a materialisation of data’s instability. I argue that visual disruptions and errors expose the precariousness of representation within photomedia technologies. Moreover, they

⁴⁰ Kontturi, *Ways of Following*, 18.

⁴¹ Barad, *Meeting the Universe Halfway*, 151.

“do not occlude the object but instead reveal the nexus of social, technological, and economic practices that is the photographic apparatus.”⁴²

The final chapter, “Inverted Landscapes,” focuses on the artistic outcomes of my thesis exhibition in which *Ambient Pressure*, *Surfacing*, and *Echo* become an assemblage. To discuss the *Inverted Landscapes* (2020) exhibition, I review artworks through the prism of Vilém Flusser’s photographic apparatus.⁴³ This framework for understanding how photography functions and behaves, from the micro to the macro, is helpful for apprehending how image culture is entangled with technology. I further establish a connection between the photographic apparatus and Timothy Morton’s concept of “hyperobjects,” entities that are spatially and temporally beyond the human frame.⁴⁴ Both of these ontological conceptions were helpful as ways to materially think through my practice. In this chapter, I formulate how my techniques of undermining photomedia expose the often transparent apparatus. I also present the idea that, in contrast to artwork that provides data and visual information about the climate crisis, my work *tunes to* the hyperobject of photomedia and the issue of nature as representation. My intention with *Inverted Landscapes* was to highlight the possibilities of seeing photomedia renderings of nature through a new materialist and posthumanist lens. Forces, forms, processes, and encounters of natural phenomena, along with photomedia and the human, co-emerge within the exhibition.

Lastly, the conclusion reflects on how more-than-representational research was mobilised throughout this PhD project. Through varying methods of working with analogue and digital photomedia technologies, my work aimed to undermine and fracture representational structures that objectify, distance, and abstract nature. I argue that the more-than-representational methods that I used contribute to a reconfiguring of how nature is conceptualised, and further, I envision the usefulness of more-than-representational research in photomedia-based creative practice.

⁴² Hannah Frank, *Frame by Frame: A Materialist Aesthetics of Animated Cartoons* (Oakland: University of California Press, 2019), 73.

⁴³ Vilém Flusser, *Towards a Philosophy of Photography*, (London: Reaktion Books, 2000).

⁴⁴ Timothy Morton, *Hyperobjects: Philosophy and Ecology after the End of the World* (Minneapolis: University of Minnesota Press, 2013).

Chapter 1: Framing

A problem of photomedia is that it can appear to be a neutral “window-on-the-world.” Yet, when it comes to systems of representing nature through photomedia, an inherent cultural inscription occurs. The act of landscaping, whether modifying terrain or representing an environment through photography, “imposes a certain order.”⁴⁵ With this in mind, I turned to my archive of photographs that I had taken in years past. Using images depicting conventional nature scenes as my starting point, I developed artistic methods to productively work against the objectification of nature that landscape and wilderness photomedia has perpetuated. My research seeks to acknowledge and address the fact that, as land artist Robert Smithson puts it, “nature is not a condition of the ideal. Nature does not proceed in a straight line, it is rather a sprawling development. Nature is never finished.”⁴⁶

The question of landscape photography as a cultural construct is addressed through a discussion of my field and studio research project, *Ambient Pressure* (2016–). The inquiry focuses on the problematics of framing nature in landscape photography; I argue that the methods used in *Ambient Pressure* literally and figuratively rupture the framing device by drawing attention to its existence. Additionally, the relationship between Cartesian duality, distance, and semiotics are outlined as problematic aspects of representation in this chapter.

As a counter to fixity of representation and semiotics, I introduce non-representational research styles as a promising approach to challenge the limitations of representational structures. As an evolution of postmodern theory and poststructuralist thought,⁴⁷ non-representational research acknowledges the liveliness of the world by taking on perspectives and approaches that are aligned with the unruly messiness of the world. In this chapter, I present non-representational research as productive groundwork to develop *more-than-representational* research in art practice.

The consideration of non-representational research is extended in the following section, where I discuss the diffractive methodology of my collaborative project *Interference Pattern* (2018–). The work of *Ambient Pressure* is a component of the collaborative project with artist Vivian Cooper Smith that explicitly engages with diffraction, and owes

⁴⁵ Wells, *Land Matters*, 1.

⁴⁶ Robert Smithson, “Cultural Confinement,” in *Robert Smithson: The Collected Writings*, ed. Jack D. Flam (Berkeley: University of California Press, 1996), 155.

⁴⁷ Vannini, “Non-Representational Research Methodologies,” 2.

its framework to Donna Haraway and Karen Barad.⁴⁸ I establish art as a boundary-drawing practice as it orders, slows, and filters the chaos of the world as put forth by Gilles Deleuze and Félix Guattari and feminist materialist philosopher Elizabeth Grosz.⁴⁹ Further, a discussion of Ilona Hongisto's "aesthetics of the frame" outlines how photomedia artwork operates on registers of signification and sensation.⁵⁰

Finally, considerations outlined in this chapter — the enframing and conceptualising of nature through photomedia and the possibility of defamiliarising representational structures through creative practice techniques — are brought together to form a speculative concept and way of working that I call "more-than-representational."

Ambient Pressure

conception of nature | cancellation | distance | the frame | enframe | perception | projection | representation | representationalism

The frame in photography is both literal and metaphorical. It is the capturing of a visual slice of time from the ongoing flow, enframing part of the world and making it an object for contemplation. It is also a primary condition, material, and practice through which we visually understand the world around us; photomedia is how we "grasp earth as an object for cognitive, practical, and affective relations."⁵¹ Photomedia evolved to become a dominant form of communication and thus should be scrutinised and critiqued. The crux of this project is an examination of how representational photomedia contribute to the distancing and objectifying of nature.

In order to move beyond narrowed perspectives of nature and the environment, it is crucial to acknowledge the frame of photomedia broadly, and landscape and nature photography specifically, as a device that constructs a point-of-view that suggests notions of authenticity and objectivity. It offers a strictly limited view yet bears the impossible task of standing in for that environment. As Liz Wells asserts, "use of the frame as a device in landscape photography begs interrogation. In effect, a rectilinear scene is abstracted and presented as if it represents the actual experience of looking at — or

⁴⁸ Donna Haraway, "The Promises of Monsters: A Regenerative Politics for Inappropriate/d Others," *Cultural Studies*, eds. Lawrence Grossberg, Cary Nelson, Paula A. Treichler (New York: Routledge, 1992); Karen Barad, "Diffracting Diffraction: Cutting Together-Apart," *Parallax* 20, no. 3 (July 11, 2014): <https://doi.org/10.1080/13534645.2014.927623>; Barad, *Meeting the Universe Halfway*.

⁴⁹ Gilles Deleuze and Félix Guattari, *What Is Philosophy?*, trans. Hugh Tomlinson and Graham Burchell (New York: Columbia University Press, 1994); Elizabeth Grosz, *Chaos, Territory, Art: Deleuze and the Framing of the Earth* (New York: Columbia University Press, 2008).

⁵⁰ Ilona Hongisto, *Soul of the Documentary: Framing, Expression, Ethics* (Amsterdam: Amsterdam University Press, 2015).

⁵¹ Parikka, *A Geology of Media*, 12.

being within — an environment.”⁵² This call to interrogate the frame as a device in landscape photography could be considered the starting point to “question assumptions about nature and culture that landscape photography has traditionally served.”⁵³

Cartesian perspective — in which the spectator exists outside of what is viewed — has influenced the conceptual and actual framing in photomedia broadly. Part of the problem with this perspective is the presupposition of a universalising logic. T.J. Demos emphasises this issue within photography by providing the example of the well-known photograph of Earth, *The Blue Marble*, taken in 1972 by the Apollo 17 spacecraft crew. He explains that, as a frequently reproduced image within visual culture, the photograph was a significant image which was called on for “a unifying ‘world perspective’ that could bring earthlings together visually — and thus sociopolitically.”⁵⁴ However, as Demos notes, anthropologist Tim Ingold argued that *The Blue Marble* is in actuality “problematic precisely because it renders the world ‘as an object of contemplation detached from the domain of lived experience.’”⁵⁵ As described by Ingold, *The Blue Marble* becomes a distanced thing to be considered and not phenomena to be sensed or related to. This issue of photography’s role in objectifying what it captures can be linked to representationalism.

Representationalism, as characterised by Barbara Bolt, is a pervasive underlying logic that “fixes the world as an object and resource for human subjects.”⁵⁶ In *Art Beyond Representation*, Bolt traces a historical Western genealogy that positioned the Cartesian regime of representation as dominate. She explains that “modern Cartesian representation is not concerned with a visual picturing, with mimesis, but rather with a modelling or framing of the world.”⁵⁷ In other words, representationalism is more than appearance and likeness; instead, it is a way of ordering the world where the human is centred as the subject and everything else becomes an object. Bolt employed the philosophy of Martin Heidegger, Bruno Latour, Gilles Deleuze and Félix Guattari, and Jacques Derrida to critique the ossification and fixity of representationalism as a system of thought because it halts the productive and ongoing becoming of the world. At issue here is that the complex and transforming world is reduced to representation or schema. Crucially, Bolt highlights the difficulty, or perhaps impossibility, of critiquing representation without employing representation itself.

⁵² Wells, *Land Matters*, 43.

⁵³ Wells, *Land Matters*, 11.

⁵⁴ Demos, *Against the Anthropocene*, 20.

⁵⁵ Demos, *Against the Anthropocene*, 20.

⁵⁶ Barbara Bolt, *Art Beyond Representation: The Performative Power of the Image* (London and New York: I.B. Tauris, 2004), 12.

⁵⁷ Bolt, *Art Beyond Representation*, 19.

It is important to emphasise that the concept of landscape itself is a construction grown out of representationalism. W.J.T. Mitchell, in *Landscape and Power*, suggests that landscape “doesn’t merely signify or symbolize power relations; it is an instrument of cultural power,” and further, “it naturalizes a cultural and social construction, representing an artificial world as if it were simply given and inevitable.”⁵⁸ This account of landscape clearly articulates a problematic relationship wherein representations of nature are taken to be “natural” and ideologically neutral. In a scathing essay examining the male-dominated traditions of American landscape photography, Deborah Bright sets out that:

Whether noble, picturesque, sublime or mundane, the landscape image bears the imprint of its cultural pedigree. It is a selected and constructed text, and while the formal choices of what has been included and excluded have been the focus of most art-historical criticism to date, the historical and social significance of those choices has rarely been addressed and even intentionally avoided.⁵⁹

Bright poses further questions to the field, including asking how landscape photography can expand beyond its self-reflexivity and be used to “question the assumptions about nature and culture that it has traditionally served.”⁶⁰ Despite that, today, this call to examine and challenge landscape photography is over thirty years old, I still find its sentiment relevant, urgent, and at the crux of my research.



Figure 5. Rebecca Najdowski, *Ambient Pressure 36*, 2020, *Ambient Pressure 6*, 2018, *Ambient Pressure 7*, 2016, pigment prints and chromogenic print, dimensions variable.

Ambient Pressure is a creative inquiry that recognises the possibility of Bright’s suggestion that landscape photography can be redeemed from its restricted position. In order to do this, it was evident that I needed to directly probe conventional landscape photography to address issues of representation and conceptualisation of nature. The title *Ambient Pressure* is derived from the term that describes the pressure of a medium

⁵⁸ W.J.T. Mitchell, *Landscape and Power* (Chicago: University of Chicago Press, 1994), 2.

⁵⁹ Bright, “Of Mother Nature and Marlboro Men,” 126.

⁶⁰ Bright, “Of Mother Nature and Marlboro Men,” 140.

which surrounds an object. This characterisation is fitting for a project that is fundamentally concerned with the weightiness of nature representation, a burden that is pervasive throughout visual culture. “Ambient pressure” also connects to the process of making the work, where often physical tension is used to create tangible ruptures in photographic film and paper.

The project *Ambient Pressure* is a series of sixty photographs and three video pieces. The photographs, ranging in size from 35 × 28 cm to 100 × 120 cm, were created through physical manipulations of film negatives, the incorporation of visual obstructions during the film scanning process, or physical modifications to printed images. With negatives of conventional images of nature as the starting point, I effaced their structure — cutting, marking, burning, folding — to give a sense of additive-erasure (Fig. 5). As the exploration developed, I also created images by physically altering photographic prints and scanning film with overlaid objects (Fig. 6). The video pieces of *Ambient Pressure* extend the inquiry into motion and duration. These strategies resulted in a project that incorporates various forms of haptic interventions with the materiality of landscape photomedia. The previously straightforward landscape imagery is thus incised with physical intrusions. By drawing attention to the material surface of photographs, I aimed to interrupt the actual and metaphorical frame of two-dimensional photography and draw attention to its existence. When the object-ness of the artworks is revealed through the manipulation of the film and paper support, it becomes difficult to view them as windows onto an environment. Instead, they demonstrate that a photograph is, in fact, a construction.

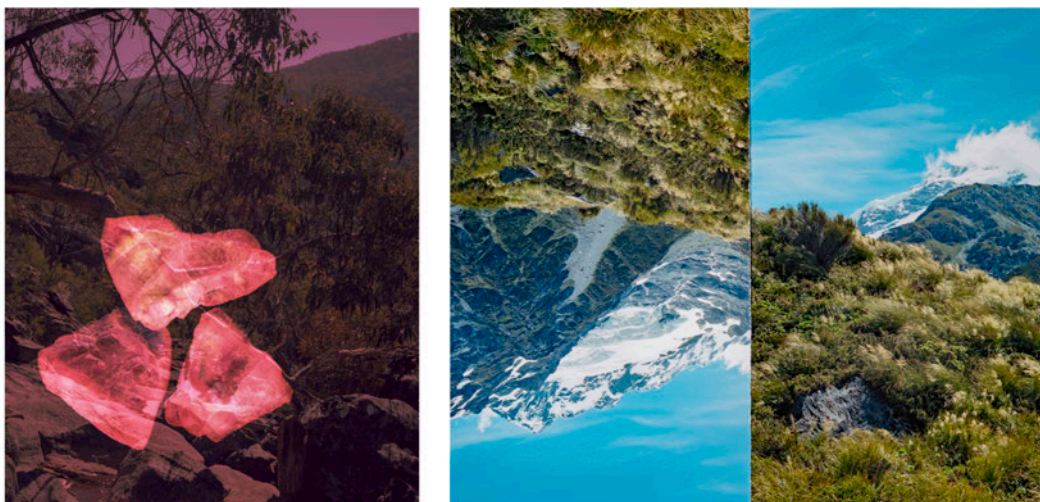


Figure 6. Rebecca Najdowski, *Ambient Pressure 12* and *Ambient Pressure 23*, 2018, pigment prints, dimensions variable.

Bringing to light the photographic materiality is an attempt, as Wells urges in *Land Matters*, to challenge the framing device of photography.⁶¹ By physically disrupting the pictorial conventions of landscape photography, these works acknowledge how photography projects an impossible order to the uncontained intensities of the Earth — the chemical, biological, spatial, and temporal. Moreover, the act of manipulating the photographic film, prints, and moving images draws attention to the incorrect presumption that the indexical, the direct relationship with the referent, and the representational conditions, are the same.



Figure 7. Thomas Barrow, *Horizon Rib*, 1974, toned gelatin silver print. © Thomas Barrow, courtesy of the artist.

In the studio research of *Ambient Pressure*, my method of deliberately creating ruptures in the photographic film and prints was influenced by Thomas Barrow's *Cancellations*. Produced primarily in the 1970s, the series depicting deadpan landscapes of the American West has affinities with the New Topographics. By gouging an "X" across the film surface and printing the resulting image, Barrow's critique becomes physical (Fig. 7). This process brings into focus the materiality of photography as a reminder of its mediating conditions. Photography historian Geoffrey Batchen posits that Barrow's Xs carved with an icepick were a violent rejection of "photography as a whole, or at least a certain understanding of photographic art."⁶² In *Ambient Pressure* I share the same desire

⁶¹ Wells, *Land Matters*, 43.

⁶² Geoffrey Batchen, "Cancellations," in *Cancellations*, Thomas Barrow and Geoffrey Batchen (Brooklyn: powerHouse Books, 2012), 97.

as Barrow, to reject the “surrogate experience.” Barrow explicates this in a letter to Van Deren Coke in 1984:

I want to alter the photographic surface — that is, move from the transparent, window-on-the-world form that has been photography’s primary reason for being since its invention, to making it a physical object, an object to be looked at for its own presence and not for a surrogate experience.⁶³

Both the works in *Cancellations* and *Ambient Pressure*, through their negation of the landscape image, become objects. Photography is steeped in the appearance of transparency. I mark the surfaces to reveal them; a gesture that shifts the experience from a window-on-the-world to a literal and apparent objectification of the world. *Ambient Pressure* investigates how to prod at the naturally assumed Cartesian perspective by highlighting the objectification that takes place through photographic representation.

In the introduction, I highlighted my view that the theoretical preoccupation with the semiotics of images can be problematic. Photography theorist Daniel Rubinstein also emphasises that focusing on the image as a representation or semiological signifier or code leaves other questions unanswered.⁶⁴ How then do we move beyond codes and representation? And on the other side of semiotics, what does the photo-image show us about how we comprehend and relate to the world around us? These questions lie beyond representation. Nevertheless, representation and signifying practices remain a necessary consideration to grapple with these concerns. The paradox of *Ambient Pressure* is its reliance on representation to undermine its limiting structures. To point to the limitations of photographic framing, the project requires its existence.

Exceeding the Frame

affective resonances | backgrounds | entangled domain | meshwork | rupture and reimagine | sensation

Engaging in non-representational research styles, which are key practices within posthumanist and new materialist scholarship, is a way to resist the fixity of semiotics in photomedia. According to Phillip Vannini, “by animating lifeworlds non-representational research styles aim to enliven rather than report, to render rather than represent, to resonate rather than validate, to rupture and reimagine rather than to faithfully describe, to generate possibilities of encounter.”⁶⁵ *Ambient Pressure*, as well as the other creative

⁶³ Quoted in Aaron Schuman, “Thomas Barrow’s Cancellations,” *Aperture*, no. 208, (Fall 2012): 31.

⁶⁴ Daniel Rubinstein, “The Grin of Schrödinger’s Cat: Quantum Photography and the Limits of Representation,” in *On the Verge of Photography: Imaging Beyond Representation*, eds. Daniel Rubinstein, Johnny Golding, and Andy Fisher (Birmingham, UK: ARTicle Press, 2013), 34.

⁶⁵ Vannini, “Non-Representational Research Methodologies,” 15.

research investigations discussed in this exegesis, developed through non-representational research styles. Non-representational methodologies are a useful way to open up the possibilities of how research can be conducive to discoveries. However, as my research advanced, a new, related research style emerged, one that is *more-than-representational*. Crucially to *Ambient Pressure*, this style of research works from within representation to make visible representational systems.

Non-representational theory originated with cultural geographer and social scientist Nigel Thrift. While initially associated with the field of geography, now wide-ranging disciples have taken on this form of research. Perhaps not a theory as such, what Thrift has cast is more a style of thinking. This style of research is experimental in nature, aims to apprehend the flows and movements of everyday life,⁶⁶ is not subject-based,⁶⁷ instead, it focuses on “*practices* understood as material bodies of work,”⁶⁸ giving “equal weight to the spillage of things.”⁶⁹ Importantly, representation itself is a factor of non-representational theory “not as a code to be broken or as an illusion to be dispelled rather representations are apprehended... as doings” to “redirect attention from the posited meaning towards the material compositions and conduct of representations.”⁷⁰

As the evolution of poststructuralist thought and postmodern theory, non-representational practices “turn away from cognition, symbolic meaning, and textuality.”⁷¹ Moreover, Thrift describes it as deriving from a desire to “get in touch with the full range of registers of thought by stressing affect and sensation... concept-percepts that are fully as important as signs and significations.”⁷² Following this, my research takes up non-representational research styles as a way to reconfigure semiotics in photomedia. Photography is typically considered to be representational images or texts to be read or decoded. On the other hand, the images from *Ambient Pressure* and the collaborative installation *Interference Pattern*, which will be discussed in the next section, are deliberately akin to the continual shifting that occurs within an environment.

Non-representational approaches to thinking with and responding to the world are not determined in advance, but cultivated through a process.⁷³ The techniques used to make *Ambient Pressure* were experimental: I used blades, lighters, markers, plastic, rocks,

⁶⁶ Thrift, *Non-Representational Theory*, 5.

⁶⁷ Thrift, *Non-Representational Theory*, 7.

⁶⁸ Thrift, *Non-Representational Theory*, 8.

⁶⁹ Thrift, *Non-Representational Theory*, 9.

⁷⁰ John David Dewsbury, et al., “Enacting Geographies,” *Geoforum* 33, no. 4 (November 2002): 438, [https://doi.org/10.1016/S0016-7185\(02\)00029-5](https://doi.org/10.1016/S0016-7185(02)00029-5).

⁷¹ Vannini, “Non-Representational Research Methodologies,” 2.

⁷² Thrift, *Non-Representational Theory*, 12.

⁷³ Derek McCormack, “Devices for Doing Atmospheric Things,” in *Non-Representational Research Methodologies*, ed. Phillip Vannini (London: Routledge, 2017), 81.

bleach, and other materials, choosing what sort of marks, ruptures, or overlays to produce based on the original landscape image. The images were composed twice — once during film capture and then when I manipulated the positive and negative film, scans, and prints. In the second stage of composition, I considered what ways I might be able to modify the framing structure. I explored how I could draw attention to the fact that ultimately the photographic image sits on a thin surface: what marks, abrasions, or obstructions could I add that will highlight the material construction? I also looked for ways that I could create affective resonances between the pre-existing landscape images and my manipulations by attending to possibilities of shared or contrasting patterns (Fig. 8). I explicitly treated each image differently and avoided creating a fixed system of procedures across the series. Each image is a variation of landscape photography that intends to shift perspective so that the construct of representation itself is seen anew. These techniques embody what Derek McCormack describes as “method” in a non-representational context; “[it] is about turning things around: defamiliarizing them; placing them in generative juxtapositionings that allow thinking to grasp a sense of liveliness of the worlds of things anew, however modestly.”⁷⁴

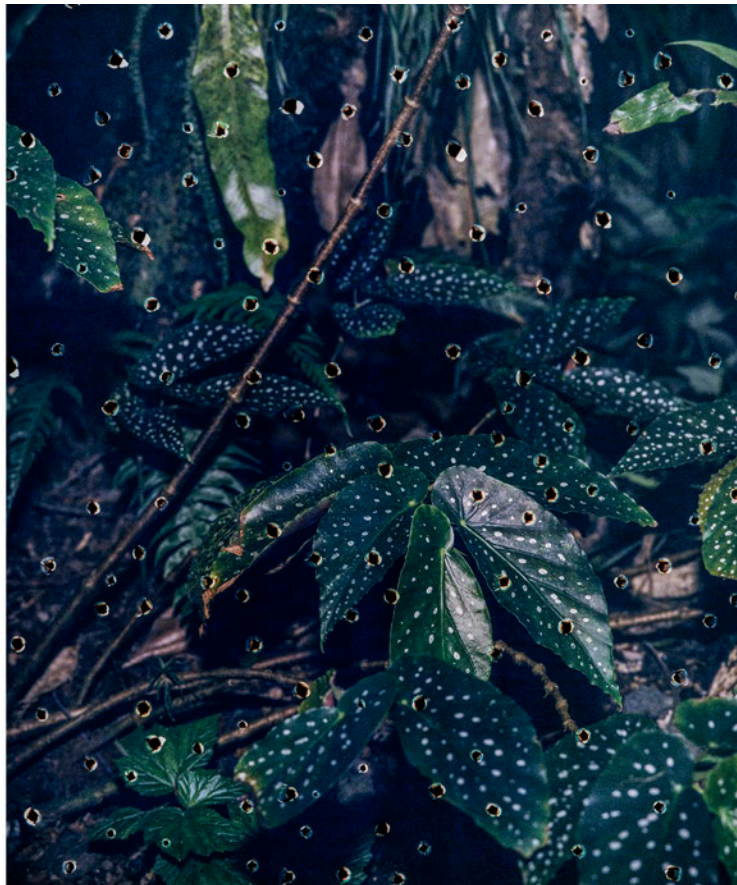


Figure 8. Rebecca Najdowski, *Ambient Pressure 8*, 2016, chromogenic print, approx. 61 × 51 cm (24 × 20 in).

⁷⁴ McCormack, “Devices for Doing Atmospheric Things,” 84.

The methods and techniques that I used to make the works in *Ambient Pressure* are procedures that bring the problem of representational constructs into a visual register. By using the pre-existing landscape photomedia, I am working within representation itself. The intervening marks, ruptures, and objects give shape to the construct of representation which, paradoxically, can otherwise seem almost invisible because it is woven into the fabric of everyday life. The register of signification of a nature scene is still present in *Ambient Pressure*; in fact, that signification is deliberately mobilised. More importantly, the modifications made to the photographs add a register of affect and sensation to the image-as-text signification.⁷⁵ While the manipulations of the photographs are intended to draw attention to the fact that photographs are constructed objects and not windows-on-the-world, the works in *Ambient Pressure* also function as thought-in-action. The photographic objects themselves are what emerge through multilayered processes of thinking-with the material of landscape photography.

In the realm of photomedia-based art, there has been an increase in practices that upend standard visual paradigms in what could be described as non-representational styles, using methods unusual or unfamiliar. Hayden Lorimer suggests that non-representational theory “works best as a background hum, asking questions of style, form, technique and method, and ushering in experimental kinds of response.”⁷⁶ Within this context, my research is related to artists who enlist analogue and digital materiality to visually address representational constructs. In *Photography is Magic*, curator Charlotte Cotton emphasises that these practices “take into account the many ways in which viewers relate to photographic media, materials, and image cultures in our current media environment.”⁷⁷ Artists include Letha Wilson who creates sculptural pieces, melding photographs of geologic formations with concrete; Thomas Albdorf whose projects identify photographic reality as a construct that can be abstracted and reconstructed through various methods of image production; and Lucas Blalock whose strange still lives embody bumbling Photoshop movements. These artists, among others, have been a touchstone for me in this area of contemporary photography because they engage with “complex inquiries into how to ‘materialize’ contemporary photographic image culture.”⁷⁸

An example of a non-representational method, mode, or form can be found in the landscape imagery made by American artist David Benjamin Sherry. In his practice, he

⁷⁵ Simon O’Sullivan’s book *Art Encounters Deleuze and Guattari* provoked my interest in thinking about “registers.” Simon O’Sullivan, *Art Encounters Deleuze and Guattari: Thought beyond Representation* (Basingstoke, NY: Palgrave MacMillan, 2006).

⁷⁶ Hayden Lorimer, “Cultural Geography: Non-Representational Conditions and Concerns,” *Progress in Human Geography* 32, no. 4 (February 8, 2008): 556, <https://doi.org/10.1177/0309132507086882>.

⁷⁷ Charlotte Cotton, *Photography Is Magic* (New York: Aperture, 2015), 3.

⁷⁸ Cotton, *Photography is Magic*, 4.

takes on the tradition of landscape photography by using a large-format camera and film to record vistas of the American West much in the vein of the modernist hero Ansel Adams. However, Sherry, in a simple manner, flips the iconic imagery by printing the images as a wash of saturated and unnatural colour (Fig. 9). The scenes are still identifiable, but the unusual colour change is confounding and draws attention to the manipulation. Through this visual disruption, the mythology of the landscapes depicted is both enlarged and reduced. Sherry's artistic gesture highlights the symbolic meaning of the landscapes that he has photographed while prompting the viewer to see the environments through a different lens, one of sensation, in contrast to representation.



Figure 9. David Benjamin Sherry, *Looking toward Valley of the Gods, Bears Ears National Monument, Utah*, 2018, chromogenic print, 180.3 × 225.4 cm (71 × 88.75 in). © David Benjamin Sherry, courtesy of the artist and Salon 94, New York.

In Sherry's work, the material disruption of what would be typically familiar landscape imagery alters the encounter that a viewer has of the image. As a non-representational style, his practice operates on a register of sensation and affect, in conjunction with a register of sign and signification. This is an important shift from conventional approaches to photography because, to return to Cotton:

The systemized "rules" of contemporary image-making have become the terrain that artists are using as a site of play, proving how far they can go in creating contemporary experiences of photographic magic that — in the vein of real magic — are orchestrated very precisely for the present moment and contingent on activating viewers' experiences and assumptions of the contemporary visual world.⁷⁹

⁷⁹ Cotton, *Photography is Magic*, 9.

An activation of assumptions of the visual world can be found in both Sherry's photography and my *Ambient Pressure* project as we both "subjectify the photographic systems"⁸⁰ of landscape photography. Activating photographic systems is a crucial step in critiquing the limitations of photomedia's representational structures of nature. Structures that are ever-present, but difficult to "see."

A significant feature of non-representational research methodologies is an intent to examine *backgrounds*, "sites that fall outside of common awareness, the atmospheres we take for granted, the places in which habitual dispositions regularly unfold."⁸¹

Interestingly, landscape has historically been envisioned as a background — the field or stage on which our human activities take place. This backdrop of nature, the screen-ness of nature, warrants a depth of examination. To understand environmental landscapes not as static backgrounds but as a flux of processes continually in a state of becoming is a necessary focus of my research. I have found Tim Ingold's anthropological research useful because it outlines ways of being within an environment that acknowledges the agential flow of non-human nature, which is an undercurrent to my project. His concept of "meshwork" presents an animated state of becoming: "what we have been accustomed to calling 'the environment' might, then, be better envisaged as a domain of entanglement... interlaced trails, continually ravelling here and unravelling there, that beings grow or 'issue forth' along the lines of their relationships."⁸² Taking into account complexities of the shifting registers, textures, and entanglements requires appropriate research approaches.

When it comes to representations of nature, *Ambient Pressure* explores how thinking-with photomedia, using methods and techniques that are unusual and unfamiliar, can generate works that resonate with the strange animate and ongoingness of the material world. Another way to describe the manifold tangle of earthly and celestial forces and matter is "chaos." Not chaotic as such, but containing "the infinite expanse of all virtual forces."⁸³ In the following section, I will expand my elaboration of the frame of photomedia in regard to chaos and discuss other methodologies that are in affective resonance with the domain of entanglement.

⁸⁰ Cotton, *Photography is Magic*, 10.

⁸¹ Vannini, "Non-Representational Research Methodologies," 9.

⁸² Tim Ingold, *Being Alive: Essays on Movement, Knowledge and Description* (New York: Routledge, 2011), 71.

⁸³ Braidotti, *The Posthuman*, 86.

Interference Pattern

aesthetics of the frame | boundary-drawing practices | chaos | cohesion | deterritorialise | diffraction | interference patterns | light physics | plane of composition | reterritorialise | sensation

The concept of framing, as discussed earlier in this chapter, presents a limiting perspective when considering how photomedia contributes toward the human conceptualisation of non-human nature. On the other hand, framing is an inherent feature in art. It is a territorialising function which distils intensity, sensation, affect, and percept from the chaos of the world.⁸⁴ Gilles Deleuze and Félix Guattari developed a perspective on the condition of art-making by establishing their notion of “the plane of composition.” In *What is Philosophy?*, they put forward that the human impulse to frame, contain, and filter what is around us emerges as a primordial inclination through architecture and art.⁸⁵

Following from Deleuze and Guattari, feminist philosopher Elizabeth Grosz expands on aspects of the plane of composition by furthering the philosophical discussion of art as a framing of chaos synthesised with ideas around biological evolution. Grosz explains that “framing is how chaos becomes territory” and “is the means by which objects are delimited, qualities unleashed and art made possible.”⁸⁶ These territories, or “networks, planes, zones of cohesion” are not a mapping of chaos, but “draw strength, force, material from it for a provisional and open-ended cohesion, temporary modes of ordering, slowing, filtering.”⁸⁷ This ordering, slowing, and filtering is a boundary-drawing practice that both captures and creates sensation and is the primary activity of art.

For Deleuze and Guattari, the framing of art and architecture functions as “sensation reterritorialized,” while simultaneously, “the plane of composition involves sensation in a higher deterritorialization, making it pass through a sort of deframing which opens it up and breaks it open onto an infinite cosmos.”⁸⁸ Their description entails a double function of the framing of the plane of composition. In essence, it is a movement that both extracts qualities of sensation from chaos and at the same time it is a movement that cuts through territory to “retouch chaos.”⁸⁹ Consider these two ideas, one, that an ordering, slowing, filtering of chaos occurs on the plane of composition of photo-generated art;

⁸⁴ Deleuze and Guattari, *What Is Philosophy?*; Grosz, *Chaos, Territory, Art*.

⁸⁵ Deleuze and Guattari’s discussion of the “plane of composition” focused on high modernism. Deleuze had a penchant for high modernism and a distain for postmodernism, however this concept can be applied to all art practices as it is a condition of art-making.

⁸⁶ Grosz, *Chaos, Territory, Art*, 17.

⁸⁷ Grosz, *Chaos, Territory, Art*, 8.

⁸⁸ Deleuze and Guattari, *What Is Philosophy?*, 197.

⁸⁹ Grosz, *Chaos, Territory, Art*, 18.

and two, that photomedia has a literal connection to the stuff of the Earth, its mineral composition and chemical processes. With these two notions, I assert that the analogue and digital artworks discussed in this exegesis both deterritorialise and reterritorialise sensations and intensities of the chaotic Earth as well as deterritorialise and reterritorialise geologic matter of the Earth.

Significance of delineating territory through the condition of art is further complicated when the art is created through a photo-process. The relationship between photomedia and the indexical creates another facet in which they operate on a “plane of signification.”⁹⁰ The “aesthetics of the frame,” a concept established by Ilona Hongisto around documentary film, provides a useful way of examining how indexical signification and actualised forms frame photomedia. Representation is further complicated by the aesthetics of the frame because it contrasts with paradigms that conceive of reality as “not expressive in itself, but knowable through modalities of representation and signification.”⁹¹ Instead, the aesthetics of the frame insists “on the emergent consistency of matter and the ways in which the frame taps into reality as occurrent.”⁹² Documentary, which arises out of a photo-process, “represents a specificity of the temporal circumstances a film emerges from”⁹³ while “actual forms delineated by the frame become expressive of dimensions that exceed them.”⁹⁴ This phenomenon, where artworks operate on registers of signification as well as registers of sensation, can be applied to all photomedia processes.

Framing can also be applied in a useful way when considering what happens when exhibiting artwork. Hongisto, Katve-Kaisa Kontturi, and Milla Tiainen explain that “framing as an act of territorialisation shifts the emphasis toward networks of relation that undulate from the frame... the orienting lines drawn around the studied object are not meant to explain or contextualise so much as to enable the liveliness of the object to live on.”⁹⁵ Enabling the liveliness of the object, or the artworks, is a non-representational research style as it gives “weight to the spillage of things”⁹⁶ from within the entangled domain of the world. In the following, I will discuss the practice of extending *Ambient Pressure* into exhibition spaces. The individual works from *Ambient Pressure* became part of my contribution to *Interference Pattern*, an ongoing collaborative project with

⁹⁰ Hongisto, *Soul of the Documentary*, 13.

⁹¹ Hongisto, *Soul of the Documentary*, 16.

⁹² Hongisto, *Soul of the Documentary*, 16.

⁹³ Hongisto, *Soul of the Documentary*, 46.

⁹⁴ Hongisto, *Soul of the Documentary*, 23.

⁹⁵ Milla Tiainen, Katve-Kaisa Kontturi, and Ilona Hongisto, “Framing, Following, Middling: Towards Methodologies of Relational Materialities,” *Cultural Studies Review* 21, no. 2 (November 2015): 24, <https://doi.org/10.5130/csr.v21i2.4407>.

⁹⁶ Thrift, *Non-Representational Theory*, 9.

artist Vivian Cooper Smith (Fig. 10). Grown out of our mutual interest in new materialist approaches to thinking through art practice, we sought a way to co-produce exhibitions where our approaches would be entangled, and each artist's work would influence the other to form new relationalities. For the project, we drew from the work of Karen Barad to engage in a diffractive methodology.

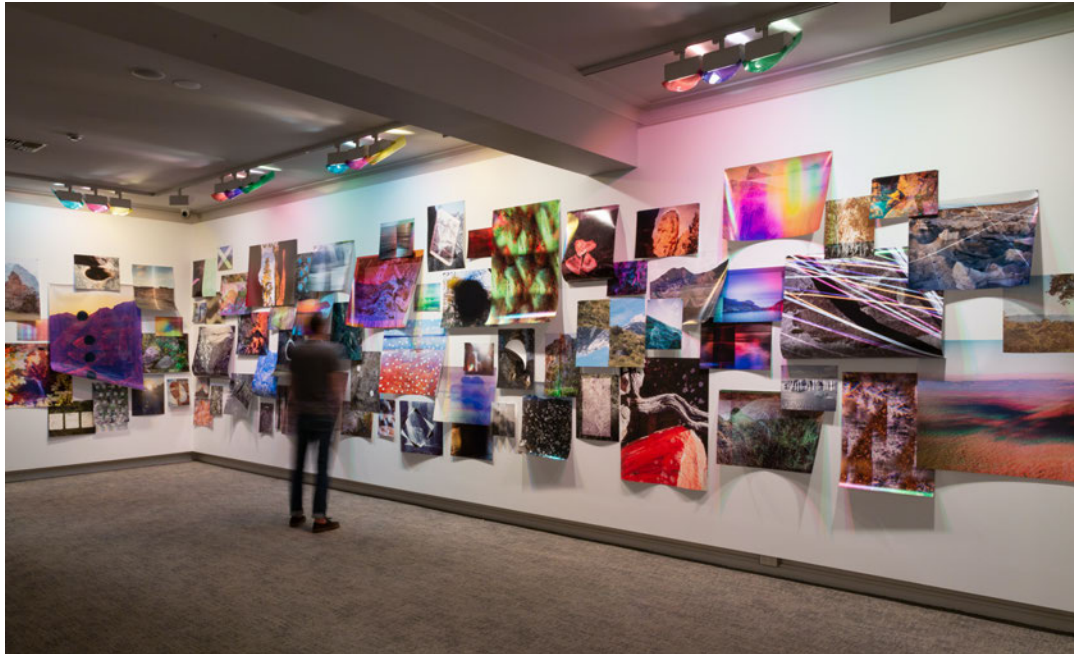


Figure 10. Rebecca Najdowski and Vivian Cooper Smith, *Interference Pattern*, 2018, photographic installation, dimensions variable. Horsham Regional Art Gallery, Horsham. Photographer: Vivian Cooper Smith.

Diffraction is a non-representational methodology as it focuses on unfoldings and entanglements. In physics, diffraction is phenomena that occurs when a wave encounters an obstacle or a slit. In the world of Newtonian physics, it can be seen as optical phenomena when light waves are obstructed or as physical phenomena when waves in water encounter obstructions, slits, or other waves (Fig. 11). In the world of quantum mechanics, diffraction occurs during the well-known double-slit experiment where at quantum scale electrons behave very strangely. As tiny bits of matter, electrons create a diffraction pattern when put through the experiment unobserved. However, when the atoms are tracked and observed in the experiment, the diffraction pattern is gone. Their bewildering behaviour points to electron particles performing as waves while at other times they respond as particles.⁹⁷

Diffractive methodology is indebted to feminist theorising about difference in addition to physics.⁹⁸ As a counter to reflection, diffraction can be a “productive model for thinking

⁹⁷ Barad, “Diffracting Diffraction,” 180.

⁹⁸ Barad, “Diffracting Diffraction.”

about nonrepresentationalist methodological approaches.”⁹⁹ Barad’s use and development of diffractive methodology follows Donna Haraway, who states that: “diffraction does not produce ‘the same’ displaced, as reflection and refraction do. Diffraction is a mapping of interference, not of replication, reflection, or reproduction. A diffraction pattern does not map where differences appear, but rather maps where the *effects* of difference appear.”¹⁰⁰ Whereas reflection is about objects and their representations, diffraction is a more complex entanglement; it is “never closed” and “never finished.”¹⁰¹ Barad takes diffraction from quantum physics and opens it up to the possibility of threading it through *everything* else.

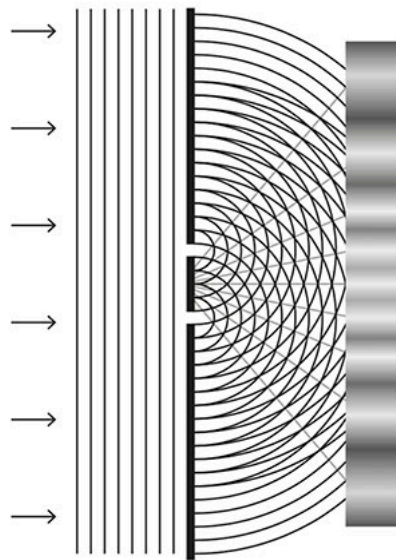


Figure 11. Diagram illustrating the patterns created by a wave encountering a barrier with two gaps. The two overlapping patterns create an interference pattern. Illustration: Vivian Cooper Smith.

Diffractive reading is a method that looks for the patterns that emerge when reading different texts through each other. Founded in feminist theory, the objective of diffractive reading is to avoid a dismissiveness that occurs with negatively critical readings as well as merely mirroring the same which occurs in reflective reading. The aim is for an affirmative openness that can produce new insights. The “texts” could be images or other physical material as well as non-material ideas, perspectives, and interpretations. Researchers across humanities fields have taken up diffraction as a metaphorical methodology in areas that include gender studies, education, literature, science studies,

⁹⁹ Barad, *Meeting the Universe Halfway*, 88.

¹⁰⁰ Haraway, “The Promises of Monsters,” 300.

¹⁰¹ Barad, “Diffracting Diffraction,” 169.

philosophy, and media art.¹⁰² The method of diffractive reading can be transposed to artistic research and practices. In some instances, artistic practice can be seen as diffractive methodology in action.¹⁰³

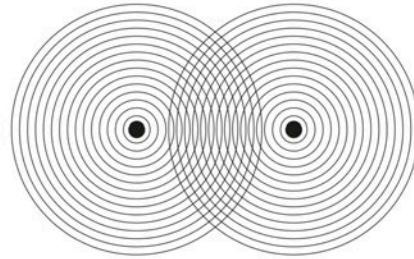


Figure 12. Diagram illustrating an interference pattern from two diffraction patterns interacting. Illustration: Vivian Cooper Smith.

As collaborators, Smith and myself think through one another's work, drawing insights through each other's practice, and making new connections and relations among the environments photographed and photographic processes and materialities. Interventions of straightforward landscape imagery formed the artworks. While my images focus on physical manipulations of photographic film and prints, Smith engages with re-photography by further altering the images through the introduction of movement during long exposures and the incorporation of crystals and mirrors to the camera lens. Both sets of images embody the performance of making and are frequently unidentifiable as specific locations. The title of the project takes its name from the *effects* of difference — the interference patterns — that are mapped out through diffraction. Interference patterns can be visualised by imagining intersecting ripples in a body of water; they interact in a way that the combination at times intensifies the waves and at other times negates the waves (Fig. 12). The project itself operates as an interference pattern; it maps the effects

¹⁰² See, for example, Serenella Iovino, "The Living Diffractions of Matter and Text: Narrative Agency, Strategic Anthropomorphism, and how Interpretation Works," *Anglia* 133, no. 1 (2015); Helen Pritchard and Jane Prophet, "Diffractive Art Practices: Computation and the Messy Entanglements between Mainstream Contemporary Art, and New Media Art," *Artnodes: revista de arte, ciencia y tecnología* 15 (2015); Kathrin Thiele, "Ethos of Diffraction: New Paradigms for a (Post)humanist Ethics," *Parallax* 20, no. 3 (2014): <https://doi.org/10.1080/13534645.2014.927627>; Iris van der Tuin, "Diffraction as a Methodology for Feminist Onto-Epistemology: On Encountering Chantal Chawaf and Posthuman Interpellation," *Parallax* 20, no. 3 (2014): <https://doi.org/10.1080/13534645.2014.927631>; and Iris van der Tuin, "'A Different Starting Point, a Different Metaphysics': Reading Bergson and Barad Diffractively," *Hypatia* 26, no. 1 (2011): <https://doi.org/10.1111/j.1527-2001.2010.01114.x>.

¹⁰³ An example of this can be found in Cory Arcangel's video work *Colors* (2006) in which he developed a computer program to translate the feature film *Colors* (1988) into data in the form of colour pixels. Here, the film-as-text is read through a program inspired by filmic slit-scan techniques, creating an artwork of abstract colour patterns. In her analysis of Arcangel's *Colors*, Amba Sayal-Bennett argues that the application of an outmoded process to the newer medium of video "sensitises viewers to changes in technological processes... through the disturbances or effects of difference that are created by superposing analogue techniques and digital technology." Amba Sayal-Bennett, "Diffractive Analysis: Embodied Encounters in Contemporary Artistic Video Practice," *Tate Papers*, no. 29 (Spring 2018), <https://www.tate.org.uk/research/publications/tate-papers/29/diffractive-analysis>.

of difference that ripple out from our respective works, revealing an entanglement of complementary and contrasting approaches, materials, and affects. The collaboration entails an approach where environment, camera, scanner, photographic materials, subject matter, and site of presentation are all agents in generating the artwork. Because of the emphasis of working with the agency of the photographic processes and materials, *Interference Pattern* can be characterised as a new materialist approach through photography which employs non-representational thought-in-action.

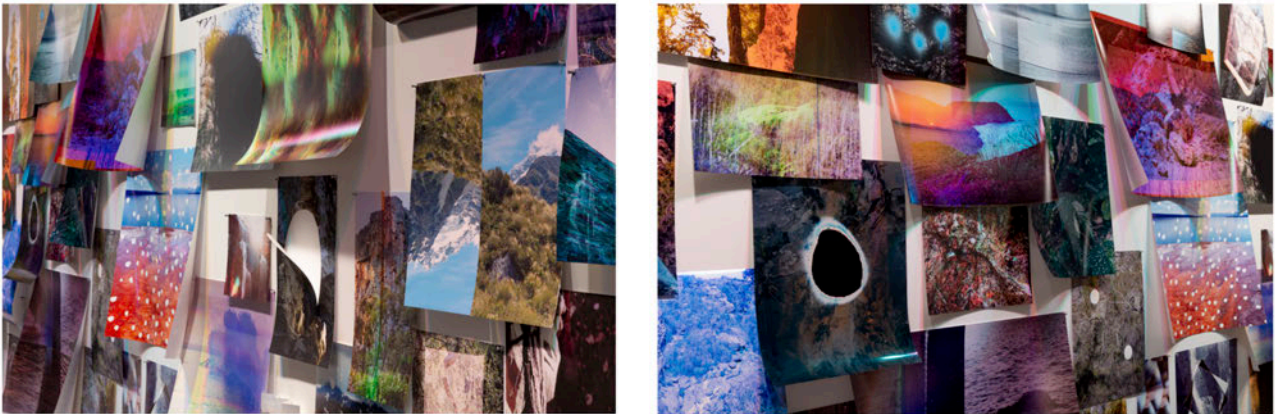


Figure 13. Rebecca Najdowski and Vivian Cooper Smith, *Interference Pattern*, 2018, installation details. Horsham Regional Art Gallery, Horsham. Photographer: Vivian Cooper Smith.

Instances of *Interference Pattern* have been presented at Perth Centre for Photography (March 2018) and Horsham Regional Art Gallery (December 2018). To give a sense of images in flux and reinforce the ongoing and experimental nature of the project, works were hung without frames, overlapping, and loosely pinned to the walls (Fig. 13). There was a purposeful non-conformity of the install through a display of images at various sizes, on various papers, some physically altered with folds, bends, tears, and cut-outs. Intending to create an installation that brought diffractive methodology into a physical presence, we deliberately employed light physics into the project's presentation. Considering interferences and obstructions as key to registering the patterns of difference in diffraction, we devised a way of lighting the prints with coloured gels. We used combinations of red, green, and blue light; and yellow, cyan, and magenta light — which combine to produce white light. When obstructions of the light waves are present with these combinations, the ensuing shadows become coloured (Fig. 14). In the installation, the layering, curling, and folding of the prints create interferences for the light waves. Shadows emerge as multilayered colours. This light physics phenomenon becomes another way for the exhibition to *become* an interference pattern. In each instance of presenting the project, the coloured shadows, shapes and forms of the prints, and the images themselves, will morph and change. The mutability points to a significant

feature of diffraction; “[it] is not a set pattern, but rather an iterative (re)configuring of patterns of differentiating-entangling.”¹⁰⁴



Figure 14. Rebecca Najdowski and Vivian Cooper Smith, *Interference Pattern*, 2018, installation detail. Perth Centre for Photography, Perth.

Interference Pattern is a boundary drawing practice as mapping the effects of difference only occur when the photographic practices of the two artists are drawn through each other. As Barad posits, “it is only through specific agential intra-actions that the boundaries and properties of ‘components’ of phenomena become determinate and that particular articulations become meaningful.”¹⁰⁵ To apply this to *Interference Pattern*, the installations as a whole are the broader phenomena with individual photographs as particular components. Following from Barad, the properties of the individual photographs become meaningful through the intra-active entanglement of the varied approaches to materially destabilising landscape images.

The iterations of *Interference Pattern* provide a “provisional and open-ended cohesion”¹⁰⁶ of multifarious renderings of landscape. To return to Deleuze and Guattari’s “plane of composition,” the artwork extracts sensations from the chaos of the world. At the same time, it also reinvigorates the “domain of entanglement” through the layering, connecting, and diverging installation. As such, it is both a reterritorialisation of

¹⁰⁴ Barad, “Diffracting Diffraction,” 168.

¹⁰⁵ Barad, *Meeting the Universe Halfway*, 93.

¹⁰⁶ Grosz, *Chaos, Territory, Art*, 8.

intensities of the Earth and a deterritorialised fragmentation of nature. The “aesthetics of the frame” furnishes *Interference Pattern* as more-than-representational photomedia through a signifying of “that-has-been”¹⁰⁷ coexisting with “expressive of dimensions that exceed”¹⁰⁸ that temporal framing.

Towards *More-Than-Representational*

Ambient Pressure embodies the contested space of landscape. The manipulations to the photo-materials make visible constructs of representation and the conceptualising that humans engage in when it comes to ideas around nature through media. Moreover, the material disruptions relate to a physical manifestation of human activity within the environment that we occupy — from resource depletion to land displacement to pollution.

Through the artwork described in this chapter, I began to develop a research methodology that is both practical and speculative. Instead of non-representational research, I would like to advance the concept of *more-than-representational* research. Geographer Hayden Lorimer has already posited that non-representational theory might be better described as more-than-representational because it is “an umbrella term for diverse work that seeks to better cope with our self-evidently more-than-human, more-than-textual, multisensual worlds.”¹⁰⁹ The more-than-representational that I am proposing includes Lorimer’s sentiment; however, I also suggest that more-than-representational can form a productive methodology for photomedia-based artistic practice in particular.

From the discoveries made through *Ambient Pressure*, I would like to put forth a provisional characterisation of more-than-representational. As a research style, it mobilises representation to undermine representationalism. It visualises limiting frameworks in order to critique them. Relatedly, more-than-representational encompasses methods and techniques that create an oscillation across both signifying registers and affective registers. To use Deleuze and Guattari’s term, there is a “double articulation” or oscillation between stratification and destratification in the production of photomedia artwork. Here, representation is stratification, or a rigid “molar” which coexists with movements of destratification, or “molecularization.”¹¹⁰ Affective intensity is the “molecular” force which undermines the “molar” surface of signification and indexicality. The power of photomedia-generated art lies in the potential of interference

¹⁰⁷ Barthes, *Camera Lucida*, 80.

¹⁰⁸ Hongisto, *Soul of the Documentary*, 23.

¹⁰⁹ Lorimer, “Cultural Geography,” 83.

¹¹⁰ Bolt, *Art Beyond Representation*, 45.

patterns that emanate from diffractive encounters between the plane of signification and the plane of composition.

This artistic research aims to tap into and become part of the ongoing becoming of the world instead of sketching a limiting and static representation. In my use of more-than-representational research, it is firmly grounded in material ways of engaging in creative practice. It is a *doing* more than a *theorising about*. The speculative dimension of more-than-representational research emerges through creative practice methods that are prismatic and entangled, informing the development of each other in a diffractive movement.

Chapter 2: Agencies

In this chapter, I undermine representations of nature through a series of camera-less experiments, titled *Surfacing*. I explored how enmeshing photo-materials with the forces and composition of the Earth could make visible the correspondences between them. For the *Surfacing* project, I exposed light-sensitive film and paper to geothermal activities and high-salinity lake water. These material trials took place on-site, at a geographical location “out in the world” or “on the land.” However, I purposely refrain from locating these works as it is vital that they are primarily brought forth by natural phenomena and forces, and do not merely become alternative representations of a place (place-ness being a cultural construct). Instead, I describe the material features of geo-bio-chemical forces with which the photomedia becomes entangled.

While landscape photography conventionally depicts scenery and implies distance, this project makes a literal connection between natural phenomena and photographic images. I sought to make pictures *with* rather than *of* the environment. The distinction between *with* and *of* is at the crux of the project because it acknowledges, and harnesses, the agency of the non-human — a fundamental aspect of new materialist scholarship. To establish the implications of agency within my project, I employ Karen Barad’s concepts of “agential realism” and “intra-action” as a critical framework that provides a substantial expansion of the ontological boundaries of photomedia.¹¹¹ I argue that considering photomedia through a new materialist prism enables us to move beyond semiotics as the primary schema of understanding how photomedia functions.

I also put forward that photomedia has material correspondences with the Earth. I use Kaja Silverman’s ontological notion of analogy as a means to examine this phenomena within the *Surfacing* project.¹¹² Further, I connect the correspondence between the material features of geo-bio-chemical forces and photomedia with Robert Smithson’s notion of “abstract geology,” which links thinking with geo-processes.¹¹³ The discussion then extends into a consideration of creative practice that purposefully works with the characteristics, affordances, and behaviours — or agential effects — of materials.

¹¹¹ Barad, *Meeting the Universe Halfway*.

I have previously co-authored an article about new materialist perspectives within photomedia by exploring Barad’s agential realism through photographic materiality. Jane Vuorinen and Rebecca Najdowski, “Surface Tension: Material Intra-Actions within Photography,” *Ruukku: Studies in Artistic Research* 9 (2018): <https://doi.org/10.22501/ruu.371917>.

¹¹² Kaja Silverman, *The Miracle of Analogy: or The History of Photography, Part 1* (Stanford: Stanford University Press, 2015).

¹¹³ Robert Smithson, “A Sedimentation of the Mind: Earth Projects,” in *Robert Smithson: The Collected Writings*, ed. Jack D. Flam (Berkeley: University of California Press, 1996).

The notion of relationalities is further examined through “medianatures,” a concept put forward by media theorist Jussi Parikka.¹¹⁴ Recognising the entanglement of technical-media-culture and nature enables a better understanding of how photomedia and the Earth dynamically correspond with one another. Emerging from of an impulse to know both photomedia and nature differently, thoroughly, and as entities of possibility — this section explores what matter can show us about the technologies we use and the greater world around us through a “critically intimate” approach.

Surfacing

agency | agential realism | anti-optical | atmospheric conditions | gelatin silver | intra-action | materiality | surfaces

Whereas in the previous chapter *Ambient Pressure* directly addressed overt representational structures, the subsequent investigation explores the possibility of a different way to undermine the pictorial function of photography. The project is an inquiry into the limits of photographic representation. To rethink how environments are represented photographically, I brought the more-than-visual aspects of Earth activities into the image-making process and the resulting photographic work. The materiality of photomedia and the materiality of Earth are intermeshed; the tangible links informed the field and studio research discussed in this chapter. I began by asking how artworks can make visible the relationship between earth processes and photomedia that “capture” and represent the Earth?

Surfacing is a conceptual-material experiment where I exposed light-sensitive film and paper to geothermal activities and high-salinity lake water. It comprises two different approaches to photo-materials; first I worked with gelatin silver paper for the works in *Surfacing (gelatin silver)*¹¹⁵ (2017) (Fig. 15), and later I worked with photographic films and printed on chromogenic paper for *Surfacing (chromogenic)* (2018) (Fig. 16). With *Surfacing (gelatin silver)* I reduce photography to its essential function: light-sensitive material (gelatin silver photo paper), light (the sun), developer (moisture), and a solution to fix or arrest the resulting image. I began by working in an environment where the Earth’s processes are dynamic and manifest to such an extent that geothermal energy is harnessed on a large scale for human use, making it accessible for this trial (Fig. 17).

¹¹⁴ Parikka, *A Geology of Media*.

¹¹⁵ I struggled to come up with an appropriate name for this process. Current nomenclature for exposing gelatin silver paper to UV light is “lumen print,” but I find this term vague and inadequate in conjuring what occurs in the process. In Geoffrey Batchen’s *Emanations: The Art of the Cameraless Photograph*, “gelatin silver solar photograph” is used in reference to Lynn Cazabon’s images, Figure 1 on page 45 and Plate 139 on page 192. I modified the term for my work, using “gelatin silver solar print,” to name the photographic materials (gelatin silver) and alludes to how it was exposed (solar). Geoffrey Batchen, *Emanations: The Art of the Cameraless Photograph* (Munich: DelMonico, 2016), 45, 192.

Physically exposing photographic paper to the chemistry, heat, and moisture of geyser plumes and steam vents creates unpredictable forms and colours. Through this process, gelatin silver (black and white) darkroom paper reveals traces of pink, grey, blue, purple, and orange forms (Fig. 15). The aesthetic traces emerge through correspondences between the silver halide particles suspended in gelatin on the surface of paper, the chemical and temperature composition of the geothermal features, the UV rays from the sun, and the duration of contact.



Figure 15. Rebecca Najdowski, *Surfacing (gelatin silver)*, 2017, gelatin silver solar prints, approx. 28 × 35.5 cm (11 × 14 in) each.

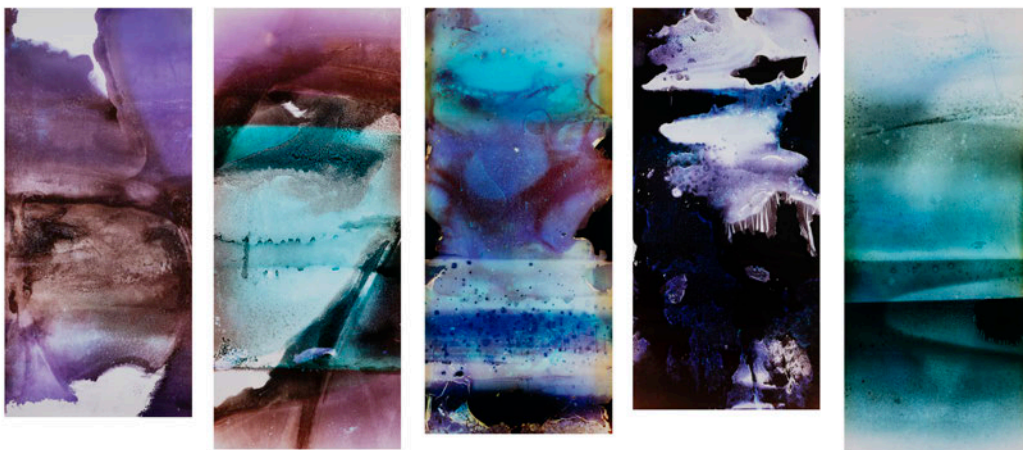


Figure 16. Rebecca Najdowski, *Surfacing (chromogenic)*, 2018, chromogenic prints, from approx. 101.6 × 213 cm to 101.6 × 228.6 cm (40 × 85 to 40 × 90 in).

In making this work, a key consideration was the importance of an attentive examination of the inherent agency of these and other non-human elements and events. Rethinking matter and its relationship to agency opens up conceptual, historical, theoretical, and material possibilities of photomedia. The concept of agency has traditionally centred on humanist notions of subjectivity and power. From this perspective, agency is something that is possessed through intentionality. In contrast, this research ascribes to an amplified notion of agency, through Barad's theory of agential realism. All matter has agency; matter itself is "not a thing but a doing, a congealing of agency."¹¹⁶



Figure 17. The artist creating a gelatin silver solar print with chemistry and heat from a steam vent, 2016. Photographer: Justin Westrum.

The early trials of *Surfacing* importantly created a circumstance which removed some human control from how phenomena within an environment come to be represented, enabling the agency of geo-bio-chemical forces and the materiality of photomedia to take precedence. *Surfacing (gelatin silver)* began with initial photographic exposure and development with geothermal forces in the field and then underwent a gold toning and fixing process in the darkroom. Further shifts in form and colour occurred as paper was dipped for various durations in a toning bath, or when liquid toner poured onto the paper was coaxed to pool and run across the surface. The resulting formal aesthetic qualities are a material and visual record of the congealing of agencies — the emerging

¹¹⁶ Barad, *Meeting the Universe Halfway*, 151.

relationality of the photo-materials, the elements and forces of the environment, the atmospheric conditions, the temporal durations, and my own choices in how to harness and handle these materials. Through this approach, the images begin to highlight the properties of photography while resonating with aspects of Earth processes and states of matter — surface, time, pressure, liquid, gas, solid, reaction, formation, crystallisation (Fig. 17).

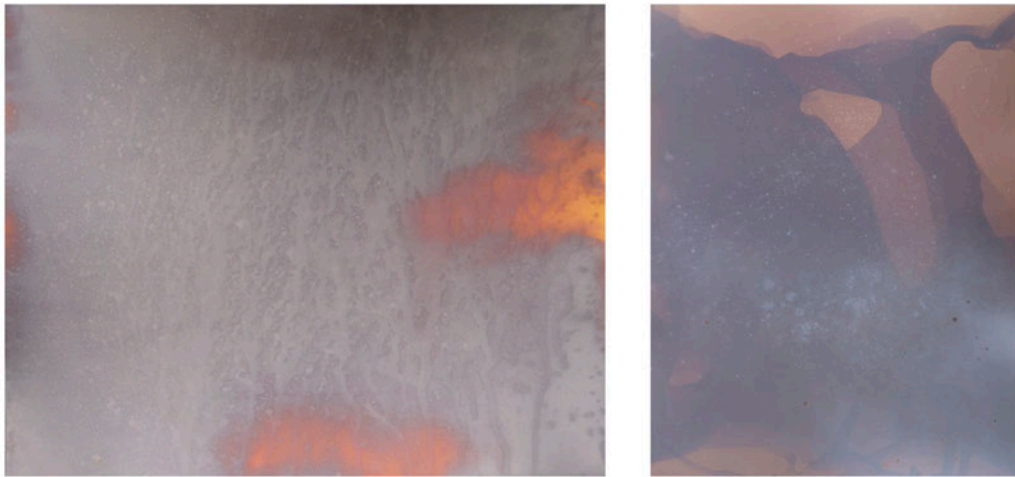


Figure 18. Rebecca Najdowski, prints from *Surfacing* (gelatin silver), 2017, gelatin silver solar prints, approx. 28 × 35.5 cm (11 × 14 in) each.

In photographic processes, the icon sign and the index sign are usually paired as a result of the imaging technology. “Indexicality intertwines with iconicity”¹¹⁷; yet, here that link is severed. The imprints of moisture and heat on the photographic surfaces do not precisely resemble the pluming steam vents from which the images were made; the photographs lack a visual register of what the environment looked like (Fig. 18). Taking into account photographic semiotics, when the material conditions of an environment are incorporated with the materiality of the photograph, the icon sign, or visual resemblance, is fractured. Instead, *Surfacing* becomes indications of intra-actions, a visual emphasis that matter is a congealing of agency. I argue that the *Surfacing* works become more-than-representational; they are more-than an indexical link to a moment that has passed. Rather, they are a visual pause of an ongoing process.

The disentangling of the icon and the index within the *Surfacing* images could be considered an anti-optical strategy. Art historian and critic James Elkins outlines some operative concepts that he argues are present in the work of artists who experiment with the limits of photographic representation. Among these concepts is the “anti-optical impulse” which, Elkins explains, is “founded on a mistrust of the means of photographic

¹¹⁷ Gunning, “What’s the Point of an Index? or, Faking Photographs,” 41.

representation — the camera, the negative, and the enlarger — and a complementary interest in discovering what photography can be when it gives up its habitual optical representation of the world.”¹¹⁸ Elkins uses German artist Marco Breuer’s practice as exemplifying a successful anti-optical approach, in part because his works are a departure from the normal photogram process; they are created through processes that are further removed from the apparatus of analogue photography like enlargers. In some instances, Breuer eschews the use of light entirely when photographic paper is physically scored with abrasive items, exposed to sprays of non-photographic chemicals, or burned with hot irons (Fig. 19). The standard development process remains for these images, still undergoing developer, stop, and fix baths. For Elkins, what “counts” is to “make an image that owes as little to ordinary photographic representation as possible.”¹¹⁹



Figure 19. Marco Breuer, *Untitled (C-1363)*, 2013, chromogenic paper, folded/burned. © Marco Breuer, Courtesy Yossi Milo Gallery, New York.

There are similar anti-optical impulses in Breuer’s work and the *Surfacing* project. In both cases, photography has been approached with an experimental sensibility to make unique images with limited use of analogue photographic toolsets. Breuer’s images appear to be concentrated on the paper itself in a decidedly self-referential way — the rejection of camera, lens, enlarger, and light sharpens the focus onto the photographic paper, the marks of the artist and his tools, and the chemical development. While *Surfacing* similarly resists many of the associated tools of analogue photography, in

¹¹⁸ James Elkins, *Six Stories from the End of Representation: Images in Painting, Photography, Astronomy, Microscopy, Particle Physics, and Quantum Mechanics, 1980–2000* (Stanford: Stanford University Press, 2008), 74.

¹¹⁹ Elkins, *Six Stories from the End of Representation*, 77.

contrast, I am seeking to broaden what is involved in creating a photograph by pulling the material world into the making processes instead of narrowing into the specifics of a limited toolset. I transferred the functions of traditional photographic tools to the elements of an environment, for example, the sun is the light source, and the geothermal activity and hypersaline environments are both the subject and the developer.

Surfacing differs from conventional photography because the material conditions of an environment are incorporated with the materiality of the photograph. A tension between pictorial depictions and material conditions is unearthed. Moreover, applying earth processes and materials to the domain of photographic practice connects to a timeframe that is typically considered outside photo-historical time. Beyond these notions of exposure duration, latency, and development, photomedia can allude to geologic deep time.

Liquid Intelligence

*chromogenic | deep time | deterioration | entropy | fossilisation | latency | sedimenting
process of becoming*

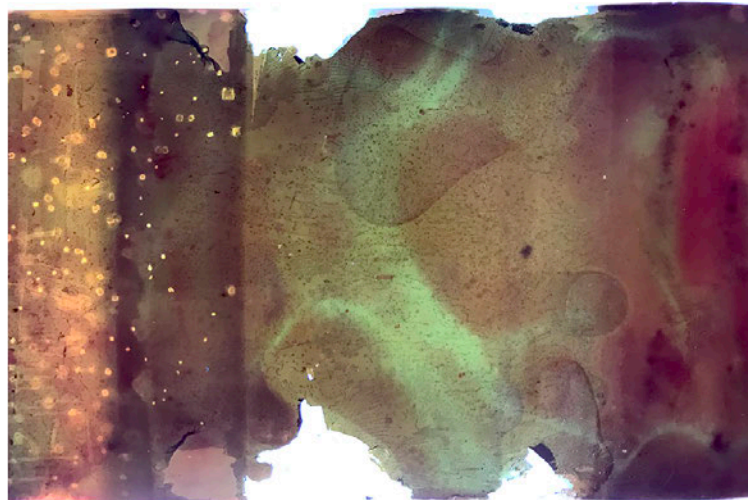


Figure 20. Film used to print *Surfacing* (chromogenic) prints.

Resembling a science fair project, I collected lake water laden with salt, algae, and extremophile bacteria¹²⁰ and submerged photographic film for roughly six months. In the analogue colour darkroom, I printed the results on chromogenic paper as if a typical negative (Fig. 20). *Surfacing* (chromogenic) took a sustained amount of time to produce in contrast to standard approaches to photography. Instead of instantaneous

¹²⁰ Carly Cassella, "How An Australian Lake Turned Bubble-Gum Pink," *Australian Geographic*, December 14, 2016, <https://www.australiangeographic.com.au/topics/science-environment/2016/12/australias-pink-lakes/>.

photographic time, a more earthly time emerged on the film as salt crystals formed and the emulsion began to break down (Fig. 21). The images show what seems to be arrested degradation. An entropic pause. Yet, the flow of entropy is always moving. Despite being “fixed,” the colour of these photographic papers will shift, become more magenta, or cyan, or yellow depending on what light and temperatures they are exposed to.¹²¹



Figure 21. Rebecca Najdowski, detail of *Surfacing (chromogenic)* 3.2 L, 2018, chromogenic print.

Chromogenic prints are notoriously unstable due to the materiality of coloured dyes; “the slow but inexorable image deterioration begins the moment processing is completed.”¹²² Through the chromogenic photographic process, colour developer and silver halide become oxidised colour developer and metallic silver.¹²³ During the development process, dye coupler reacts with oxidised colour developer and the silver is bleached out, leaving the dye clouds to create the image.¹²⁴ All of this occurs within layers of emulsion sensitive to red, green, and blue wavelengths of light (cyan, magenta,

¹²¹ Gawain Weaver and Zach Long, “Chromogenic Characterization: A Study Of Kodak Color Prints, 1942–2008,” *Topics in Photographic Preservation* 13, American Institute for Conservation of Historic and Artistic Works (2009): 73.

¹²² Henry Wilhelm and Carol Brower, *The Permanence and Care of Color Photographs: Traditional and Digital Color Prints, Color Negatives, Slides, and Motion Pictures*, (Grinnell, IA: The Preservation Publishing Company, 1993), 2.

¹²³ Weaver and Long, “Chromogenic Characterization,” 68.

¹²⁴ Weaver and Long, “Chromogenic Characterization,” 72.

and yellow layers).¹²⁵ The dyes themselves are fragile and subject to fading and staining. Ester Leslie's description of colour's chemical materiality gets to the heart of the entropic characteristic of chromogenic prints:

Colour is fragile and contingent. Colour is fleeting, fugitive, unstable, more attuned to the memory than to the objective world, always escaping or seeping away, fading as night falls or when the sun shines too brightly. Chemists struggle to make it last. Colour is motile. And in the realm of colour, chemical colour, synthetic colour, nothing remains the same as it was yesterday.¹²⁶

Entropy is an irreversible condition.¹²⁷ The *Surfacing* (chromogenic) works are an impression of colour and texture shifts suspended in time. An echo of the elemental in photography; flows, ferments, erosions, and other movements coalesce on the surfaces.

In both trials of *Surfacing*, fieldwork and darkroom methods take advantage of the relationship between fluidity and analogue photography, something that Jeff Wall illuminates in his essay "Photography and Liquid Intelligence":

...water — symbolically — represents an archaism in photography... This archaism of water, of liquid chemicals, connects photography to the past, to time, in an important way. By calling water an "archaism" here I mean that it embodies a memory-trace of very ancient production-processes — of washing, bleaching, dissolving, and so on... In this sense, the echo of water in photography evokes its prehistory... this "prehistorical" image of photography — a speculative image in which the apparatus itself can be thought of as not yet having emerged from the mineral and vegetable worlds...¹²⁸

Wall conjures a primordial process that points to the mineral aspect of the Earth and its relationship with analogue photography, a correspondence which *Surfacing* is attempting to connect with. The expanse of time that Wall describes here establishes a precedent of thinking about photomedia's relation to the Earth beyond the historical date of invention. I find this to be a fascinating concept that expresses expanded ways of conceptualising time within photography. It suggests a "deep time" of media, traced out by Siegfried Zielinski, which resists linear evolution of media.¹²⁹

The influence of time and fluidity in analogue photographic processes is also apparent in the work of Alison Rossiter. In her work, she takes expired darkroom photographic paper

¹²⁵ Weaver and Long, "Chromogenic Characterization," 72.

¹²⁶ Esther Leslie, *Synthetic Worlds: Nature, Art and the Chemical Industry* (London: Reaktion, 2005), 247.

¹²⁷ Robert Smithson, "Entropy Made Visible," in *Robert Smithson: The Collected Writings*, ed. Jack D Flam (Berkeley: University of California Press, 1996), 301.

¹²⁸ Jeff Wall, "Photography and Liquid Intelligence," in *Jeff Wall: Selected Essays and Interviews*, ed. Peter Galassi (New York: Museum of Modern Art, 2007), 109.

¹²⁹ Siegfried Zielinski, *Deep Time of the Media: Toward an Ecology of Hearing and Seeing by Technical Means*, trans. Gloria Custance (Cambridge, MA: MIT Press, 2006).

and develops selected areas without exposing it with a negative or to the light of an enlarger (Fig. 22). The creation of these works invokes the outdated terms “wet-darkroom” and “wet-printing”: Rossiter pours and pools liquid developer directly onto the surface, or dips the sheets into developer baths. The results are abstract forms displaying the characteristics of a chemical interaction and time’s effect on the paper. The process reveals the chemical shifts of photographic emulsion that have occurred as the boxes of paper sat in storage, forgotten, for dozens of years. Her procedures reactivate a material that, conventionally, would be viewed as unusable.



Figure 22. Alison Rossiter, *Defender Argo, expired September 1911, processed 2014 (#5)*, gelatin silver print. © Alison Rossiter, Courtesy Yossi Milo Gallery, New York.

Rossiter’s work, through the forces of chemical interaction and time — and notably without exposure to light — conjures a primordial, subterranean process. It is not light-writing, the etymology of the word “photography,” but a writing of inky shadows. The materiality of Rossiter’s liquid-form shadow-writing emphasises the wet processes that churn with a temporality in analogue photography, metaphorically linked to the transformative and incalculable character of earth processes. In both Rossiter’s work and the *Surfacing* project, surface, duration, chemical interaction, and transformation are engaged, resulting in photographs that are more than objects; instead, they are a congealing of agency of process and material. *Surfacing* invokes a temporal scale beyond the historical through chemical, geological, and biological inscriptions.

Joanna Zylinska proposes in *Nonhuman Photography* that “all photography, with its capacity to capture light and make it act upon surfaces, acts as a cue for the goings-on of deep time, well beyond human control and human existence.”¹³⁰ She materially connects photography to the process of fossilisation and argues that it is more than a memory trace, but an “actual material record of life.”¹³¹ In Barad’s notion of agential realism, time is not a backdrop of sequential moments; instead, temporality and spatiality are created through dynamics of intra-action.¹³² She uses a metaphor to evoke the “sedimenting process of becoming,”¹³³ and provoke thinking around intra-action: “as the rings of trees mark the sedimented history of their intra-actions within and as part of the world, so matter carries within itself the sedimented historialities of the practices through which it is produced as part of its ongoing becoming.”¹³⁴ Importantly this is not about time leaving its mark as it were and continuing onward into the future; rather, the point is that intra-action is what constitutes temporality.¹³⁵ This is to say that time, matter, and space continuously enfold as a “spacetime-matter manifold.”¹³⁶

To bring this back to *Surfacing*, the aesthetic traces on the light-sensitive paper and film are a record of agencies in flux — of environmental matter and of the material of photomedia in a visual pause of flow. As Barad contends, “making/marking time is a lively material process of enfolding.”¹³⁷ The mark of time resides on the perceptual surface despite the inherent strata of photo-materials. The notion of surface intra-actions in this project would seem to imply superficiality; however, there is purposeful tension with deep primordial and geologic time referenced in the images. Through enfolding earth processes with the materiality of photomedia, the photographic surfaces are inscribed with the material conditions of their making and register agential intensities of more-than-human nature as a way to reconfigure what landscape photography can be.

Correspondences and Analogy

abstract geology | analogy | atmospheric attunements | correspondences | earth processes | metallurgy | photochemical reactions

Photographs are Earth. This can be seen in the permutations of organic and non-organic material substrates, and light-sensitive minerals like silver halide particles suspended in

¹³⁰ Zylinska, *Nonhuman Photography*, 126.

¹³¹ Zylinska, *Nonhuman Photography*, 104.

¹³² Barad, *Meeting the Universe Halfway*, 180.

¹³³ Barad, *Meeting the Universe Halfway*, 181.

¹³⁴ Barad, *Meeting the Universe Halfway*, 180.

¹³⁵ Barad, *Meeting the Universe Halfway*, 181.

¹³⁶ Barad, *Meeting the Universe Halfway*, 181.

¹³⁷ Barad, *Meeting the Universe Halfway*, 181.

an emulsion of gelatin within the very stuff of analogue film and prints (Fig. 23). Digital photomedia may seem immaterial like ether, appearing only when we call it up on our screens, but digital material also comes from the Earth (Fig. 24). As Parikka asserts, “media history conflates with earth history; the geological materials of metals and chemicals gets deterritorialized from their strata and reterritorialized in machines that define our technical media culture.”¹³⁸ In other words, there is a real correspondence between media and the Earth as physical materials mined from the Earth are transmuted into the technological media that we use.



Figure 23. Electron microscope image of Kodak T-grain silver halide crystals.

In *The Miracle of Analogy*, Kaja Silverman argues that photography was viewed as receptive to the agency of the world in her analysis of writings from the early years of the medium as well as reflections on proto-photography, like the camera obscura.¹³⁹ The way in which Silverman considers photography to be a receptive surface is manifested in the *Surfacing* experiments and corresponds to Barad’s emphasis that agency is an enactment. Silverman ascribes the term “analogy” to “Being” (with a capital B), or “the world” where everything carries “the same ontological weight.”¹⁴⁰ Photography is not a copy or an index attributed to a technology, but a liquid development where the world images itself.¹⁴¹

To make her case, Silverman returns to the writing of inventors of photographic processes. She highlights that Louis Jacques Mandé Daguerre, who developed the

¹³⁸ Parikka, *A Geology of Media*, 35.

¹³⁹ Silverman highlights the use of the term “receiving surface” by Arab scholar Alhazen in the eleventh century when describing the optical phenomena of a camera obscura and also draws from the writings of Louis Jacques Mandé Daguerre, William Henry Fox Talbot, and others to describe photography as the means in which the world reveals itself, beyond human determination. Silverman, *The Miracle of Analogy*, 10–27.

¹⁴⁰ Silverman, *The Miracle of Analogy*, 11.

¹⁴¹ Silverman, *The Miracle of Analogy*, 12.

daguerreotype process with Nicéphore Niépce — a singular photographic image on a reflective, polished metal surface — wrote: “the daguerreotype is not merely an instrument which serves to draw Nature... it is a chemical and physical process which gives her the power to reproduce herself.”¹⁴² This notion that photography is a way for the world to image itself is further emphasised by the words of William Henry Fox Talbot, who developed the calotype process, a paper negative that could be waxed in order to reproduce positive images from the original. Talbot states: “it is not the artist who makes the picture, but the picture which makes *itself*.”¹⁴³ These, and other examples provided by Silverman, contribute to an understanding of the inherent agency of the world in the creation of photographic images.

I am using Silverman’s account of analogy, which includes acknowledging the agency of the world in the production of photographic images, but I am also maintaining the notion of analogy as a correspondence. This research indicates that photography, through its processes and materialities, has actual correspondences to geophysical systems.



Figure 24. Screenshot of Google Earth view of lithium mines in the salt flats of the Atacama desert, Chile, 27 December 2019. Map data: Google, CNES / Airbus, Landsat / Copernicus, Maxar Technologies.

I argue that exposing the inherent analogues between photomedia and geophysical systems — surface, time, interaction, minerals, transformation — can generate new ways to know photography and related photomedia. These correspondences can be seen as a distinct way to examine photomedia’s crucial role in how we understand nature. I use

¹⁴² Quoted in Silverman, *The Miracle of Analogy*, 26.

¹⁴³ Quoted in Silverman, *The Miracle of Analogy*, 10.

the term “earth processes” to emphasise the notion of process, either the action of becoming or the activity of entropy, as this is also a primary behaviour of photography. Process is a common word associated with photography. Used as a noun, it relates to different processing techniques — e.g. the gelatin silver process, the wet-plate collodion process, the gum-bichromate process, and so on. More importantly, the verb “process,” to carry out an action or series of actions to cause a change in condition, emphasises time and transformation. I see the geophysical systems — Earth’s interacting physical, biological, and chemical processes — as corresponding to a particular vision of photography.

The *Surfacing* experiments highlight photographic materiality — its fragility and susceptibility to the forces of the world — and renders more tangible the notion that photography is a receptive entity. Both practical and aesthetic strategies work against traditional modes of making photographic images, wherein the materials and processes drive the artwork and agential factors of an environment are activated. Authorship of the artwork becomes more ambiguous and conventional pictorial structures of landscape photography are rejected. As a consequence of its experimental nature, this project enlarges the analogous connections between Earth and photography. Through the deliberate use of environmental forces and phenomena, *Surfacing* accentuates the photochemical reactions, topological shifts, and ongoing transformation of earth processes that can be found within photographic practices — making visible the notion that photography is an echo of the elemental.

Surfacing is a part of the “geologic turn” within the humanities that is “adding new layers of cultural meaning and aesthetic sensation to the geologic.”¹⁴⁴ My research resonates with artists, designers, and philosophers that situate their “aesthetic work and experimental thinking *within the geologic as a condition of our present time.*”¹⁴⁵ But the Earth’s forces and processes are also materially linked to human history. In *A Thousand Years of Nonlinear History*, Manuel DeLanda connects human development, both concrete and abstract systems like physical cities and economic markets, to material energy flows, frictions, dynamics, and intensities. DeLanda characterises this complexity:

human culture and society (considered as dynamical systems) are no different from the self organized processes that inhabit the atmosphere and hydrosphere (wind circuits, hurricanes), or, for that matter, no different from lavas and magmas, which as self-assembled conveyor belts drive plate tectonics and over millennia have created all the geological features that have influenced human history. From the point of view of energetic and catalytic flows, human societies are very much

¹⁴⁴ Elizabeth Ellsworth and Jamie Kruse, eds., *Making the Geologic Now: Responses to Material Conditions of Everyday Life* (Brooklyn: Punctum Books, 2013), 6.

¹⁴⁵ Ellsworth and Kruse, *Making the Geologic Now*, 9.

like lava flows; and human-made structures (mineralized cities and institutions) are very much like mountains and rocks: accumulations of materials hardened and shaped by historical processes.¹⁴⁶

DeLanda's connections here are, at the same time, metaphorical and embodied.

Robert Smithson has also proposed a geologic thinking that artists engage in. The analogy between earth processes and photomedia can be related to his "abstract geology" of the mind, a material thinking that coalesces with the processing of the Earth.¹⁴⁷ Smithson's writings around deterritorialized materials, thinking, and art have resonated with my practice for quite some time, and it has importantly resurfaced in this research. In discussing the potential of Smithson's abstract geology, Parikka explains that it "links mental processes to geology and also to the regime of perception and sensation" and can "be expressed through art practices and discourses that connect art with the theoretical work of new materialism."¹⁴⁸

Parikka connects Smithson's abstract geology to the concept of the metallurgist as a figure who is interested in, and attuned to, the "primacy of variation as a way of understanding and tapping into the characteristics of the materials."¹⁴⁹ Metallurgy is a knowledge-practice that is driven by material agency. For Deleuze and Guattari metal and metallurgy highlight "a material vitalism that doubtless exists everywhere but is ordinarily hidden or covered" with metallurgy being the "consciousness or thought of the matter-flow."¹⁵⁰ In *Vibrant Matter*, Jane Bennett points out that the metallurgist focuses on not what metal is, but what it can *do*, enabling an ability "to collaborate more productively with it."¹⁵¹ While the idea of metallurgy can be applied broadly to working with the agential capacities of all materials, it interestingly connects in a literal way to the material composition of photomedia — for instance the silver, platinum, and palladium of analogue photography processes and the metals in digital image sensors like the commonly used CMOS (complementary metal–oxide–semiconductor) sensor. I argue that the *Surfacing* project exemplifies a metallurgic mode of working with photomedia as the agential intensities of the materials are the driving force in the production of artworks.

¹⁴⁶ Manuel De Landa, *A Thousand Years of Non-linear History* (New York: Swerve, 2000), 55.

¹⁴⁷ Smithson writes: "All chaos is put into the dark inside of the art. By refusing 'technological miracles' the artist begins to know the corroded moments, the carboniferous states of thought, the shrinkage of mental mud, in the geologic chaos — in the strata of aesthetic consciousness. The refuse between mind and matter is a mine of information." Smithson, "A Sedimentation of the Mind: Earth Projects," 107.

¹⁴⁸ Parikka, "Earth Forces," 55.

¹⁴⁹ Parikka, "Earth Forces," 53–54.

¹⁵⁰ Gilles Deleuze and Félix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia*, trans. Brian Massumi (Minneapolis: University of Minnesota Press, 1987), 411.

¹⁵¹ Bennett, *Vibrant Matter*, 60.

Surfacing (chromogenic) photographs are an embodiment of the agential flow of all materials and processes involved, including: salts, bacteria, algae, gelatin emulsions, silver halide, plastics, water, the sun, and duration, as well as the enlarger lamp, the lens, the coloured filters, exposure time, processing chemistry, and the chromogenic paper's material composition and behaviours. In making the work, I was involved in "atmospheric attunements," a process that could be described as "an intimate, compositional process of dwelling in spaces that bears, gestures, gestates, worlds," where "things matter not because of how they are represented but because they have qualities, rhythms, forces, relations, and movements."¹⁵² I see atmospheric attunement as a manifestation of metallurgic approach by attending to matter and its movements.

Making photographs in the darkroom centres on engaging with the way that photographic materials *behave*. Like the metallurgist, I immerse myself in a process that leads to an understanding of what the materials can do. When making a print from an enlargement of film, I am attuned to the material attributes, behaviours, affordances, and constraints. The process of making a mural-sized print (from 1 m × 1.5 m+) from a section of 120 film requires an intimate awareness of the photographic materials and toolsets. In the darkroom, the visual results start to materialise through the behaviour of light projected through the surface area of the film and dispersed through the enlarger lens. The light-sensitive paper then responds to the intensity of the exposure — which is dependent on the density of the film, the filter colour combinations, the aperture of the lens, the height of the enlarger, and duration of exposure to light. Other factors influence material behaviour, like the temperature and level of exhaustion of the processing chemistry, the particularities of the processing machine (its construction, wear of rollers, and so forth), and the age of the paper and under what conditions it was manufactured, shipped, and stored. For the enlargements that I made with the *Surfacing (chromogenic)* prints, I became attuned to the photographic materials in conjunction with the printing apparatus of the enlarger and processor. It is through this attunement to the agential behaviours that the photographs come into being. The images on the chromogenic paper are phenomena that emerge through intra-active materials — the entangled relations of light, lens, film, atmospheric durations, environmental entities, and other material factors.

The geologic consciousness that Smithson articulated resonates with the conceptual-material inquiry that drove the experimentation in *Surfacing*. Through artistic attunement with the materials and abstract geological thinking that connects mental processes to earth processes, the works in *Surfacing* make visible a geological-becoming that arise

¹⁵² Kathleen Stewart, "Atmospheric Attunements," *Environment and Planning D: Society and Space* 29, no. 3 (2011): 445, <https://doi.org/10.1068/d9109>.

through the material agencies of the photomedia and toolsets as well as the agencies of the environmental forces and phenomena.

Entanglements and Critical Intimacies

co-constituting | entangled relationalities | facets | medianatures | multi-causal | stratification

Through a close examination of the histories and tangible elements of the materials and functions of photomedia, this research aims to unearth the inherently entangled relationalities of the actual Earth, its processes, and photomedia. Parikka's concept of "medianatures" is vital to this perspective of photomedia because it emphasises the entanglement of spheres of technical-media-culture (including photomedia) and nature. He explains medianatures as: "a concept that crystallizes the 'double bind' of media and nature as co-constituting spheres, where the ties are intensively connected in material nonhuman realities as much as in relations of power, economy, and work."¹⁵³

Medianatures was adapted from Donna Haraway's "naturecultures" which entail relationships that are co-constituting. Haraway's point is that nature and culture are not binary but inherently interconnected.¹⁵⁴ The co-constituting aspect of medianatures can be thought of as intra-acting: that nature and photomedia (the technical-media-culture) emerge through their intra-action.¹⁵⁵ Or, in other words, our understanding of nature comes through its entanglement with photomedia and vice versa. It is this co-constituting relationship of nature and photomedia that is critical to my research.

A *critically intimate* approach to looking at photomedia brings in to view the threaded textures of relational materiality. I am borrowing the concept of critical intimacy from Adrian Miles who uses it as a counter to critical distance, "because such intimacy obliges us to negotiate, consider, address, deal with, and wonder about the relational, active, agential, and relational complexity of real things in actual contexts."¹⁵⁶ Media archeology can also be helpful to this pursuit as it seeks to understand the entanglement of history and the present by focusing on the internal logic of technology outside of

¹⁵³ Parikka, *A Geology of Media*, 14.

¹⁵⁴ Donna Haraway, *Companion Species Manifesto* (Chicago: Prickly Paradigm Press, 2007), 12.

¹⁵⁵ When thinking about intra-action in terms of agency, Erin Manning's use of "agencement" instead of "agency" can help illuminate the relational aspect because it comes out of "ecology of practices" where there is an "articulation of the political that is not reducible to preexisting constituencies." Erin Manning, *The Minor Gesture* (Durham and London: Duke University Press, 2016), 123.

¹⁵⁶ Adrian Miles, et al., "From Critical Distance to Critical Intimacy: Interactive Documentary and Relational Media," *Critical Distance in Documentary Media*, eds. Gerda Cammaer, Blake Fitzpatrick, and Bruno Lessard (Cham Switzerland: Palgrave Macmillan, 2018), 308.

In a similar vein, Marsha Meskimmon has advocated for "affirmative criticality" of contemporary art — to approach the potential of art as an engagement with the co-constitution of aesthetics and ethics. Marsha Meskimmon, *Contemporary Art and the Cosmopolitan Imagination* (London and New York: Routledge, 2010), 91.

human agency. It is important to acknowledge that media archeology typically engages in an in-depth analysis of a technology, examining aspects from the minute and invisible, to major functional characteristics. While media archeological aims and perspectives inspire some of the discussions within this exegesis, I am not engaging in exhaustive media archeological analysis as such. In the following, I will discuss photography's relational materiality by taking on a critically intimate approach, touching on elements of photomedia with some brevity by looking at a *Surfacing* (chromogenic) print (Fig. 25).

One way of thinking about the relational nature of agential realism, or how the world behaves, is to consider the “facets” of entities. According to Miles, facets are the internal and external relationalities from which a thing, or entity, “comes to be and how it comes to matter for other things.”¹⁵⁷ What might we find when purposefully attuning to the entangled facets of a thing?:



Figure 25. Rebecca Najdowski, *Surfacing* (chromogenic) 2.1.3 L, chromogenic print, 2018, approx. 101.6 × 228.6 cm (40 × 90 in).

¹⁵⁷ Miles, “From Critical Distance to Critical Intimacy,” 306.

At first glance, colours and forms on the surface seem to be abstract; it does not appear to be a photographic image that represents a subject captured by a camera. The abstract quality, the non-representational condition, and the scale of the print invoke modern or contemporary painting. Sensation overrides representation here.

But visual texture of colour flows and crystallised formations conjure a relation to microscopic views. In fact, the process of enlargement of film resembles the way that a microscope allows for an investigation of the structure of small things. Both enlargements of film and views through a microscope provide a new vision that is beyond the ability of the unaided human eye. This facet links to scientific vision and investigation which examine how things behave.

The colours and forms of the print surface are the result of exposure to a projected enlargement of photographic film which had previously been exposed to lake water. Like the transformations that occur on a Petri dish in a lab, a confluence of algae, bacteria, minerals, water, UV rays, time, temperature changes, and the photographic emulsion of gelatin and silver-halide particles interacted with each other, impressed their influence on each other and created new colours and forms. The chemical and biological of the photographic image development is inflected with links to scientific experimentation.

Relations between the material of the photographic film and paper connect back to the chemistry of geology. The actual matter of the photomedia is constituted from materials of the Earth such as chemical compounds like silver halide, which oxidise and undergo a development into metallic silver, the chemical and mineral constitutes of coloured dyes, and substrates for light-sensitive emulsion, like cellulose acetate. Analogue photography is “fun with chemistry,” yet, this matter of the Earth, transformed into the photo-materials, expresses a relationality with implications of resource excavations, the geopolitics of labour, and environmental effects of imaging technologies.

Surfacing (chromogenic) evolved through interaction with biological beings within the salty lake water. The algae and bacteria involved in making photographic impressions connects back to the earliest published book of photography, Anna Atkins’s Photographs of British Algae: Cyanotype Impressions (1843). The camera-less analogue photograph relates to very early uses of light-sensitive materials to record, like the cyanotype, discovered by Sir John Herschel and cemented in history by Atkins.

The print itself, produced in an analogue colour darkroom, refers to the more than a century and a half in which darkroom development was the dominate method for making photographs. Developed through a chromogenic process, a stratification of emulsion dye layers that are sensitive to different light spectrums (red, green, and blue)

demonstrates photography's relation to light physics and is coupled with the technology of optics through the enlargement process.

In the digital age, it also connects to nostalgia for "slow" processes, latency, a sense of non-digital time scales. The duration of the film and lake water directly engaging in mutual transformation is filtered through the technology. Ancient time is processed through analogue time, and (most commonly) viewed in digital time. The facet of photographic discourse is dappled with textures; this photographic image is entangled with photography's history and material roots, semiotics, the history of representing nature in landscape, non-objective photography...

Attuning to a multiplicity of facets, a single photographic image materialises through intra-acting phenomena of geology, biology, chemistry, celestial patterns, climate, time, technology, and culture in all of their relational messiness. Attending to facets that arise when considering the *Surfacing* example points to one of Barad's most crucial concepts, that of "mattering," wherein "matter and meaning are not separate elements... mattering is simultaneously a matter of substance and significance."¹⁵⁸ The emphasis on the simultaneous, on the co-constitution, of matter and meaning resonates with my research as it opens up the capacity for photographic meaning beyond representationalism and indexicality.

In terms of photographic semiotics, recognising this enmeshment of nature and technical-media-culture provides a lens that expands and alters the indexical lens. By focusing on matter and intra-active relations, photomedia can be seen as corresponding with more-than the image referent. The indexical nature of photomedia lends the sense that they are *of* something. In this research, I am interested in subverting the index. To disrupt the conventions of landscape photography, which hinge on visually depicting scenery and imply distance, through *Surfacing* I make photo-works *with* rather than *of* natural phenomena.

Becoming Geological

This project proposes that there are correspondences between photomedia and earth processes and examining these correspondences can be useful in developing a more-than-human and more-than-representational perspective of photography that accounts for the agency of matter. In these trials, matter is revealed as a congealing of agency which becomes visually traced out in the surfaces of images. Photographic paper and film is always a materialisation of forces: the physical media, the history and culture of photography, and the geo-bio-chemical elements. The photo-surfaces, in their ongoing

¹⁵⁸ Barad, *Meeting the Universe Halfway*, 3.

materialisation, can be seen as reconfigurations of boundaries, readily making visible some of the relationalities ongoing in all photographs and photographic practices.

Here I would like to add to my provisional definition of more-than-representational research described in the previous chapter. More-than-representational methodology also incorporates techniques that enable non-human agencies within materialities and practices of photomedia. As *Surfacing* exemplifies, enabling non-human agencies within photomedia creative practice can also be expanded to include the agential capacities of more-than-human nature. My approach through *Surfacing* attempts to discover ways of becoming more collaboratively *with* the world. Shifting from an anthropocentric perspective to de-centred and multiple perspectives are significant as it more accurately embodies the world, the nature of reality, right down to the quantum.

Approaching photomedia as a material-becoming, a flux of Earth and time, disrupts the established norms of landscape photography and provides an alternative view of a nature/culture/media-entanglement. *Surfacing* seeks to make a direct connection, enfolding earth processes with photographic materials, giving rise to photographs that are sites for becoming, registering forces intra-acting, temporally pausing the agential flow of more-than-human nature. This direct encounter between the photo-materials and natural phenomena reduces the distance between an environment and its representation.

Chapter 3: Affordances and Thresholds

Recently in my art practice I have become interested in how photomedia can be extended into spatialised forms. To test the possibilities of digital 3D technology, I began to experiment with a 3D scanner. For the *Echo* project, I scanned plants found in the Royal Botanical Gardens in Melbourne, Victoria. However, the environmental conditions and the physical flora objects in the landscape are beyond the imaging threshold of the scanner. Uncontrolled light and complex textures translate into digital 3D objects that are riddled with flaws and information gaps (Fig. 26). I contend that pushing a system beyond the limits of its designed affordances allows for a better understanding of the system or apparatus. This chapter focuses on the discoveries made through experimenting with the signaleptic conditions of the photomedia device and the plant forms. Similar to the *Surfacing* project, where I avoided discussing the geographical sites of my field work, with *Echo* I refrain from identifying the plants that I scanned. In these projects, I want to turn away from the human categorisation of naming and turn towards the forces of natural phenomena.

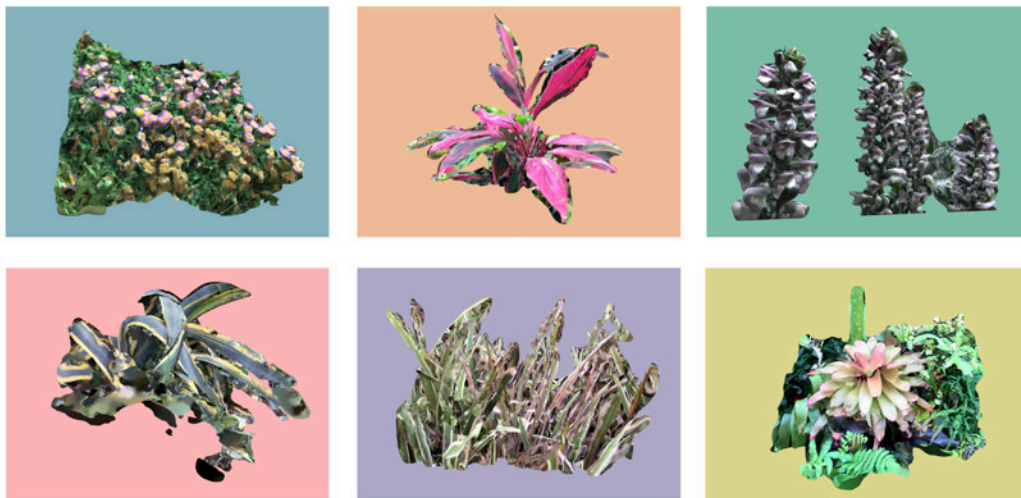


Figure 26. Rebecca Najdowski, *Echo*, digital 3D models from photogrammetry scans, 2019.

In this chapter, I explore the potential of testing the affordances and limitations of digital photomedia technology when it comes to visually translating depictions of nature. Using Gilbert Simondon's ontogenetic concept of "transduction,"¹⁵⁹ I discuss how the conditions of the environmental locations and plant forms are "signaleptic material"¹⁶⁰ that move from one plane to another. The signaleptic is information and intensity —

¹⁵⁹ Gilbert Simondon, "The Genesis of the Individual," in *Incorporations*, eds. Jonathan Crary and Sanford Kwinter (New York: Zone, 1993).

¹⁶⁰ Bodil Marie Stavning Thomsen, "Signaleptic, Haptic and Real-Time Material," *Journal of Aesthetics and Culture* 4, no. 1 (2012): <https://doi.org/10.3402/jac.v4i0.18148>.

photons bouncing off plant forms — which get transformed or re-articulated into digital 3D botanical models.

Echo highlights a material tension of light. Light is both a fundamental condition and a source of unruly sensory information in the scanning process. The excessive photons create visual aberrations, or deterritorialisations, within the botanical forms. In this chapter, I look to both Rosa Menkman's and Sean Cubitt's theorising on the material and conceptual phenomena of glitch, particularly the notion of glitches as noise or entropy within a system.¹⁶¹ *Echo* is about enabling the conditions of data to become undone, in doing so, the apparatus is revealed. I argue that making ruptures visible betrays a sense that the representational system is ordered and flawless. I use Gilles Deleuze and Félix Guattari's ideas of "lines of flight" and "smooth space" to look at how *Echo* deterritorialises representational structures and visual distance.¹⁶²

I explore how *Echo* functions within the philosophical conceptions of the "virtual" and the "actual" with particular attention paid to how the virtual's relationship to indeterminacy affects the photographic discourse around semiotics. My discussion briefly returns to Karen Barad to consider how "agential cuts" become applicable in the *Echo* project by looking at how photomedia make cuts into the ongoing flow and how experiencing the botanical models through touch enacts cuts.¹⁶³ *Echo* is a haptic encounter which allows one to experience the botanical objects as contours of signalitic material or flora-as-landscape.

Signal

affordance | *optical unconscious* | *signalitic conditions* | *threshold* | *transduction* | *translation* | *strange stranger* | *uncanny*

The notion of material and technological affordances and thresholds emerged from the field and studio work of *Ambient Pressure* and *Surfacing*. I began to notice how material attributes, behaviours, and constraints have productive margins. The theory of affordance was first developed by perceptual psychologist James Gibson. He outlined that what is perceived within an environment are not properties as such, but "affordances."¹⁶⁴ Perceptions of affordances are based on the potential of what they offer, how they could be value-rich; a process which occurs through relations as "affordances point both ways,

¹⁶¹ Rosa Menkman, *The Glitch Moment(um)* (Amsterdam: Institute of Network Cultures, 2011); Sean Cubitt, "Glitch," *Cultural Politics* 13, no. 1 (April 10, 2017): <https://doi.org/10.1215/17432197-3755156>.

¹⁶² Deleuze and Guattari, *A Thousand Plateaus*.

¹⁶³ Barad, *Meeting the Universe Halfway*.

¹⁶⁴ James J. Gibson, *The Ecological Approach to Visual Perception* (New York: Taylor & Francis Group, 2014), 121–135.

to the environment and to the observer.”¹⁶⁵ The concept of affordances can then be extended to other environments and the affordances of all sorts of materials and technologies can be considered.

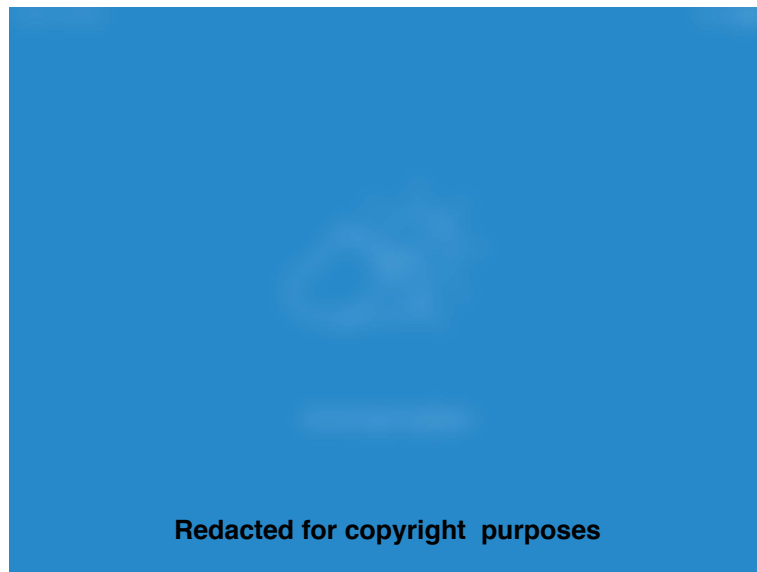


Figure 27. Screenshot of iSeez3D mobile app “do not scan outdoors” pop-up message, 12 December 2019.

The research described in this exegesis demonstrates a deliberate undermining of the affordances of media technologies. For the *Echo* project, I used Occipital’s Structure Sensor 3D scanner mounted to an iPad and operated by the app iSeez3D. Together, this technological framework translates 3D shape, texture, and colour through the light and depth information that it receives. When using the scanner with the mobile app, a message pops up cautioning against outdoor scanning (Fig. 27). Light outdoors is uncontrolled and can be intense, creating unruly conditions that exceed the limits of the scanner. The “do not scan outdoors” warning was likely added to the app to direct operators from attempting to make scans within environmental conditions that are beyond the system’s ability to produce aesthetically or representationally faithful 3D models. Despite this warning, the 3D botanical objects of the *Echo* project were created from scans taken outside (Fig. 28). I purposefully worked at the margins of the 3D scanning framework, against accepted uses and procedures of the device, occasionally dipping across its imaging threshold. This artistic strategy provided the “condition for the emergent and the unforeseen”¹⁶⁶ within a photomedia system intended for accuracy.

Photomedia are sensing technologies. Like other media counterparts that detect the properties of sound or geometric objects, photomedia sense the properties of light, and

¹⁶⁵ Gibson, *The Ecological Approach to Visual Perception*, 131–132.

¹⁶⁶ Tim Barker, “Aesthetics of the Error: Media Art, the Machine, the Unforeseen, and the Errant,” in *Error: Glitch, Noise, and Jam in New Media Cultures*, ed. Mark Nunes (New York: Bloomsbury, 2011), 50.

in the case of 3D scanners, light and depth. Photomedia measures specific variables or stimuli and converts this data (in the form of photons) into a visual record. Within digital photomedia, the conversion process involves algorithmic computation. As Adrian MacKenzie and Anna Munster have pointed out, “a camera is no longer an image-taking device but rather an entire sensing ‘platform’ capable of carrying out the distribution and integration of different forms of processing.”¹⁶⁷



Figure 28. Process documentation, scanning a plant in the botanical garden with Occipital's Structure Sensor scanner mounted to an iPad.

Using this logic, the scanner and accompanying iPad app used to generate *Echo* can be considered a sensing device as they convert stimuli and input into digital data. As signal, the energetic forces and material structure of the environment are translated into digital form. Philosopher of technology Gilbert Simondon's ontogenetic concept of “transduction” is useful in considering this process. Influenced by the scientific term which defines the conversion of energy from one form to another, Simondon's transduction describes a process of structuring.¹⁶⁸ Transduction is a transformation from the “preindividual” state of forces and tensions of potential into an “individual” being, either physical, biological, mental, or social.¹⁶⁹ On this process of coming into being,

¹⁶⁷ Adrian MacKenzie and Anna Munster, “Platform Seeing: Image Ensembles and Their Invisibilities,” *Theory, Culture & Society* 36, no. 5 (November 2018): 12, <https://doi.org/10.1177/0263276419847508>.

¹⁶⁸ Simondon, “The Genesis of the Individual,” 313.

¹⁶⁹ Simondon, “The Genesis of the Individual,” 304, 313.

Elizabeth Grosz explains that “it is a movement through different forces that transforms them through the elaboration of dimensions, magnitudes, vectors, by enabling a being to exist amidst their contrary and competing forces.”¹⁷⁰ Brian Massumi has taken up and modified Simondon’s conception of transduction, describing it as “the transmission of a force of potential” where it passes from one plane of actualisation to another.¹⁷¹ When it comes to digital media, the transduction movement across planes creates oscillations between sign and “signaletic material” within and alongside “the possibilities for different and genuinely novel composites of intensities, forces, fields.”¹⁷² The works of *Echo* have undergone a re-articulation process. Depth, texture, colour, and form of the plants, along with the atmospheric conditions affecting the intensity of photons bouncing off flora, are transformed. They move from a plane of environmental matter and force to a plane of digital materiality where the data is encoded and continually refigured and assembled as manipulatable visual objects on a screen.

Echo is computational media in the enmeshed sense. Jennifer Gabrys aptly puts it this way: “computational media unfolds not only through the capacities of devices but also through their environmental entanglements and effects, where material conditions such as soil and air together with circuits and screens generate concrete sensor-entities and experiences.”¹⁷³ The 3D botanical models are created through algorithmic computation, which “undertakes generative rather than merely descriptive, engagements” as “it processes data to arrive at another point of synthesis.”¹⁷⁴ The scanner I used for the *Echo* project combines photogrammetry with depth sensing. Incorporating a camera and an infrared sensor, the scanning process stitches together multiple images with depth information to create a digital 3D model. With the *Echo* scans, the translation process interprets excessive photon data and unruly plant morphologies to generate new forms, colours, textures that were not present in the original plants.

A new map of the flora is created, one that betrays the original. Floating on backdrops of faded peach, lilac, mint, dusty blue, sulphur green, and pink are 3D plant models; their coarse geometries slowly rotating. Some of the botanicals are missing structural information. As if eaten by insects, chunks of leaves are absent. With others, photographic textures of plant surfaces warp and stretch into unidentifiable contours. The photographic images depicting petals, grasses, and other forms melt and blur. Distinct

¹⁷⁰ Elizabeth Grosz, “Identity and Individuation: Some Feminist Reflections,” in *Gilbert Simondon: Being and Technology*, eds. Arne De Boever et al. (Edinburgh: Edinburgh University Press, 2012), 42.

¹⁷¹ Massumi, *Parables for the Virtual*, 42.

¹⁷² Anna Munster, “Signaletic Immediations: Sensing New Media as Relational Events and Ecologies,” in *Immediation I*, eds. Erin Manning, Anna Munster, and Bodil Marie Stavning Thomsen (London: Open Humanities Press, 2019), 231.

¹⁷³ Jennifer Gabrys, *Program Earth: Environmental Sensing Technology and the Making of a Computational Planet* (Minneapolis: University of Minnesota Press, 2016), 16.

¹⁷⁴ Jennifer Gabrys, *Program Earth*, 11.

colours from the photographic information lose their semblance and congeal into mottled blobs. The verisimilitude between original botanical within the real-world environment and the digital copy is distorted.

The works for *Echo* were scanned at Melbourne's botanic garden. Botanic gardens embody the ways that humans shape non-human nature to their desire. The gardens aggregate together plants from a variety of climates, ecosystems, and geographic locations into a single site. I see a connection between photography and botanic gardens as they are both designed to frame, study, and define the world while aesthetically captivating viewers. Likewise, both material practices flourished because of colonial and imperial activities. The garden became an ideal site to scan flora because it provided an opportunity to access a variety of plants originating from different parts of the world, allowing me to create a series of 3D botanical objects that are untethered from a specific geographic environment.¹⁷⁵

Rendering botanical specimens through a photomedia process harkens back to a historical fascination with a vision of the world that could be uncovered by photography and film. German photographer and educator Karl Blossfeldt's early twentieth century depictions of botanicals using magnification and enlargement exemplified a photographic vision that was previously unavailable to humans (Fig. 29). In "News About Flowers" from 1928, Walter Benjamin, in his first published writing on photography, reviews Blossfeldt's photobook *Ordinary Forms of Art: Photographic Images of Plants*. In it, he exclaims that through photographic enlargement and time-lapse photography of plants "a geyser of new image-worlds hisses up at points in our existence where we would least have thought them possible."¹⁷⁶ Benjamin describes an agency of the plants, whose "forms already send out signals from their veiled state"¹⁷⁷ to Blossfeldt, the observer, who renders the plants' enhanced strangeness.¹⁷⁸

¹⁷⁵ For a discussion on how the botanical collections within Sydney Botanic Gardens became an archive of botanical knowledges from Australia and elsewhere, see environmental historian Jodi Frawley's PhD thesis which looks at how botanic gardens have connections with colonial settlement and are also transnational networks of botanical exchange. Jodi Frawley, "Botanical Knowledge, Setting Australia: Sydney Botanical Gardens 1896–1924," (PhD thesis, University of Sydney, 2009) <http://hdl.handle.net/2123/10463>.

¹⁷⁶ Walter Benjamin, "News about Flowers," in *Walter Benjamin: Selected Writings*, vol. 2, part 1, 1927–1930, trans. Rodney Livingstone et al., eds. Michael W. Jennings, Howard Eiland, and Gary Smith (Cambridge, MA: Belknap, 1999), 156.

¹⁷⁷ Benjamin, "News about Flowers," 156.

¹⁷⁸ Benjamin is also explicit in separating the photographic enlargements of plants from a microscopic visual experience. This is to say that these enlargements of the larger parts of plants lead to "a wholly different realm of forms" than does the enlargement of the smaller parts, like the cellular structure as seen through a microscope. Benjamin, "News about Flowers," 156.



Figure 29. Karl Blossfeldt, *Adiantum Pedatum*, ca. 1920s, gelatin silver print.

Blossfeldt's photographic botanical studies, through technological innovation of lenses and enlargement, demonstrate Benjamin's "optical unconscious" which connects psychoanalytic ability to uncover previously unseen or unknown forces in the human psyche with photography's ability to make visible previously unseen forces and structures in the physical world.¹⁷⁹ To return to Benjamin's writing about Blossfeldt's botanical photographs, he again suggests the presence of an agency which the camera is uniquely capable of translating: "for it is another nature which speaks to the camera rather than to the eye."¹⁸⁰

Photomedia allows one to perceive scales and speeds that are outside of human perception. The agency of the technology gives humans the ability to experience a world that is usually beyond our spatial and temporal experience. As Benjamin explains it:

With the close-up, space expands; with slow motion, movement is extended. The enlargement of a snapshot does not simply render more precise what in any case was visible, though unclear: it reveals entirely

¹⁷⁹ See Walter Benjamin, "Little History of Photography," in *Walter Benjamin: Selected Writings*, vol. 2, part 2, 1931–1934, trans. Rodney Livingstone et al., eds. Michael W. Jennings, Howard Eiland, and Gary Smith (Cambridge, MA: Belknap, 1999); and Walter Benjamin, "The Work of Art in the Age of Mechanical Reproduction," in *Illuminations*, trans. Harry Zohn, ed. Hannah Arendt (New York: Schocken, 1968).

¹⁸⁰ Benjamin, "Little History of Photography," 510.

new structural formations of the subject. So, too, slow motion not only presents familiar qualities of movement but reveals in them entirely unknown ones.¹⁸¹

This technological ability defamiliarises the dimension that humans can perceive unaided, providing a layered dimension that is the same world, but an uncanny one. The optical unconscious of time-lapse photography, for Timothy Morton, reveals “an uncanny, morphing flow.”¹⁸² This technologically augmented sight pulls us closer to the “strange stranger.” “The strange stranger is at the limit of our imagining”¹⁸³ and embodies the paradox of lifeforms: the more we know about them the stranger they become.

Echo taps into an optical unconscious in a similar way to Blossfeldt’s botanical photographs. Created nearly a century apart, both sets of botanical renderings enable the viewer to see structures which were previously imperceptible through an explicitly technological vision. Whereas Blossfeldt’s photographs magnified the minute details and revealed “an entire unsuspected horde of analogies and forms in the existence of plants,”¹⁸⁴ an encounter with the *Echo* objects allows one to traverse the digital structure and terrain of botanical signaletic material in intimate detail.

Noise

excessive light | glare | glitch | instability of data | lines of flight | photons

The stippled sunlight below trees is a reminder that the conditions of photography, optics and photons, are an aspect of our daily experience — a function of the Earth as we experience it through our visual, perceptual capacities. The circular dapples of light are hundreds of projected images of the Sun as they move through apertures of the open shapes that overlapping leaves create. If there was any question, on the occasion of a solar eclipse the circular dapples become crescent-shaped as the Moon passes between the Sun and the Earth. Light, or photons, is the most fundamental aspect of photomedia. Media theorist Sean Cubitt elucidates what is intrinsic to photomedia: “the universe projects its ancient light onto and through our sensorium, and we project our order onto it.”¹⁸⁵ This statement recalls the notion that media is how we structure, and thereby compose, the forces and phenomena of the world.

¹⁸¹ Benjamin, “The Work of Art in the Age of Mechanical Reproduction,” 236.

¹⁸² Morton, *The Ecological Thought*, 43.

¹⁸³ Morton, *The Ecological Thought*, 17.

¹⁸⁴ Benjamin, “News about Flowers,” 156.

¹⁸⁵ Sean Cubitt, *The Practice of Light: A Genealogy of Visual Technologies from Prints to Pixels* (Cambridge, MA: MIT Press, 2014), 30.

It is interesting to note that which is fundamental to photomedia is the same energy which brings the scanner system used to make *Echo* to the brink of non-function. The intensity of light provides too much information to be accurately translated by the device. Barbara Bolt discusses the possibility of too much light, particularly in the Australian context, where the intensity and glare of the Sun requires a rethinking of how light “reveals, unveils, illuminates, makes perceptible.”¹⁸⁶ The visual metaphor of light as a force that makes form and knowledge legible does not hold up. Instead, where concentrations of the Sun’s energy override Enlightenment cohesion, “the plane of organisation is ruptured, creating a massive deterritorialisation... glare undoes fixity.”¹⁸⁷ The intensity of the Sun, along with the complexity of flora forms, deterritorialise representation within the *Echo* botanical objects. The visual aberrations that occur in the digital 3D plant structures could be characterised as “glitches” — sections of the 3D objects are smeared, displaced, or rendered absent (Fig. 30).



Figure 30. Rebecca Najdowski, detail of *Echo*, digital 3D model from photogrammetry scan, 2019.

The flaws and information gaps are glitches in a system that demonstrate the instability of data. For the purposes of this research, the concept of the glitch is broad. While most commonly associated with digital malfunctions, I also include analogue errors or mishaps and define glitch as a movement in which any system has gone errant. Cubitt characterises glitches as “liminal events, thresholds between internal and external”; noise which can “be seen both as primeval nature and as the entropy that threatens

¹⁸⁶ Bolt, *Art Beyond Representation*, 125. Originally published as the journal article: Barbara Bolt, “Shedding Light for the Matter,” *Hypatia* 15, no. 2 (2000): 202–216.

¹⁸⁷ Bolt, *Art Beyond Representation*, 135.

every act of order.”¹⁸⁸ Rosa Menkman, an artist and theorist who has examined the material and conceptual implications of glitches, also discusses them in terms of noise and entropy. Menkman looks to Claude Shannon’s 1948 mathematical theory of communication to address how entropy, “the measure of disorder of a system at a given time,” can be beneficial “because it can tell something about the relationships between the material bodies, representations and spaces connected together for the purpose of transmission.”¹⁸⁹ Noise artefacts are indications of a failure of a media to disappear, to be transparent.¹⁹⁰



Figure 31. Clement Valla, *Postcard from Google Earth* (46.705444°, 7.0890408°), 2019. © Clement Valla, courtesy of the artist.

Postcards from Google Earth (2010–ongoing), by Clement Valla, is an archival project which captures the failures of Google Earth. Fascinated by the anomalies within Google’s imaging system to render human-made topological formations visually accurate, Valla began collecting screenshots of these instances (Fig. 31). Tracing the surface of Google Earth, Valla encountered droopy and warped bridges; irregularities startling in their impossibility. These apparent flaws of Google’s patented Universal Texture appear to be an error in the algorithm; however, Valla is careful to point out that they are a “logical

¹⁸⁸ Cubitt, “Glitch,” 22.

¹⁸⁹ Menkman, *The Glitch Moment(um)*, 13–14.

¹⁹⁰ Menkman, *The Glitch Moment(um)*, 14.

result of the system.”¹⁹¹ As an “edge condition,” they show the seams in what is meant to be a seamless representation.¹⁹² The aesthetic glitches within Google Earth’s attempt at a seamless representation of the planet occur as a result of incongruence within the texture mapping process. The mapping of 2D aerial photographs onto digital 3D renders of Earth’s topographical surfaces usually look convincing to the eye, but *Postcards from Google Earth* demonstrates that Universal Texture does not always maintain visual semblance when photographic elements have pictorial depth.

The visual glitches present in *Echo* occur through a similar texture mapping process. From light and depth information, the Structure Sensor and mobile app create a 3D form on which photographic texture is mapped. A scan registers point cloud data, or spatial data, of the object or environment and reconstructs a 3D armature of polygon mesh from that information. For *Echo*, the “texture” is photographic images captured during the scanning process. One way to envision these models is to imagine a 3D form of latticework covered in a skin of colour values that give the impression of surface pattern and volume (Fig. 32). Within the *Echo* botanicals, the relationship between colour and depth has locations of fracture; it is within those cracks that the imaging apparatus becomes visible. Where the apparatus is visible, the media’s ability to “disappear” or become a transparent experience is negated.



Figure 32. Rebecca Najdowski, *Echo* detail with the 3D model's wireframe visible, digital 3D model from photogrammetry scan, 2019.

The locations on the 3D models where visual semblance breaks down are thresholds that expose the complexity of this kind of photomedia. In contrast to 2D photographs that are the result of a single captured frame, the digital 3D objects are composites of

¹⁹¹ Clement Valla, “The Universal Texture,” Rhizome.org, published July 31, 2012, <https://rhizome.org/editorial/2012/jul/31/universal-texture/>.

¹⁹² Clement Valla, “The Universal Texture.”

spatial data and visual data. However, composite photography is not new. In the late 1800s, Eadweard Muybridge and Étienne-Jules Marey pioneered photography that froze time in sequence. Muybridge used a bank of cameras to capture exposures in quick succession, Marey used only one camera layering different exposures into a blended image. These early accounts of composite photography could be considered the first application of photogrammetry. Muybridge and Marey's images are "chronophotography," as named by Marey; for them, the purpose of bringing together multiple exposures was to depict and understand time.¹⁹³ In contrast, composite photography is adopted to give a sense volume and spatial presence in contemporary uses of photogrammetry for 3D modelling. While *Echo* and *Postcards from Google Earth* are both projects that centre on the representational threshold of photomedia-enabled texture mapping, I see my practice as fundamentally different. Valla travels through Google Earth, to find and document representational ruptures in the system. With *Echo*, I am working *with* the agencies of the technology and the environmental conditions. Aware of the scanner's inability to accurately render complex botanical forms within uncontrolled conditions outdoors, I *enable* representational ruptures by pushing the technology past its threshold.

Echo's experiments with digital thresholds reveal that the "breaking point" is an intra-action of the internal limitations within the technology (its capacity to record certain conditions) and the external, environmental conditions (like inherent brightness and the distance between the technological apparatus and the object being recorded). It is this specific tension between internal and external contingencies and limitations that I am most interested in harnessing. The flaws and information gaps are glitches in a system that demonstrate the instability of data and reveal the apparatus itself. Evidence of errors and disruptions, as Hannah Frank writes, "do not occlude the object but instead reveal the nexus of social, technological, and economic practices that is the photographic apparatus."¹⁹⁴ My final chapter will elaborate on this nexus that is the photographic apparatus.

Visual schisms within *Echo* are "lines of flight" from the structure of data and the stratum of representation. Deleuze and Guattari explain that "there are lines of articulation or segmentarity, strata and territories; but also lines of flight, movements of deterritorialization and destratification."¹⁹⁵ Importantly, in *A Thousand Plateaus* the translation of "fuite" in French to "flight" in English "covers not only the act of fleeing or

¹⁹³ The work of Muybridge and Marey is alluded to in Benjamin's discussions of the optical unconsciousness. For a media archaeological discussion of chronophotography see Wolfgang Ernst, *Chronopoetics: The Temporal Being and Operativity of Technological Media* (London and New York: Rowman & Littlefield, 2016), 40–49.

¹⁹⁴ Frank, *Frame by Frame*, 73.

¹⁹⁵ Deleuze and Guattari, *A Thousand Plateaus*, 3.

eluding but also flowing, leaking, and disappearing into the distance.”¹⁹⁶ The fissures and aberrations in a system designed to be representational are noise artefacts that betray flawless ordering and processing. To return to Cubitt’s elaboration of glitch, he writes: “their liminality operates between the smoothed and insensible operation of numerical code and the eruption of code into sensation.”¹⁹⁷ The breaking away from seamless structure into sensation produces a sense of the uncanny; a “complex landscape of unexplainable, unfathomable and otherworldly images and data structures.”¹⁹⁸ These glitches pull us closer to the strange stranger of technology.

Echo

agential cuts | haptic engagement | liquid crystals | scale | tactile vision | touchscreens | the virtual

From environmental properties and intensities to visual glitches as sensation, the *Echo* botanical forms are a direct result of the conditions of data. Our experience of the digital is fundamentally one of scale. Digital data are discrete forms. They are individual pieces that together build a code of information which approximates the analogue information that it translates. Digital data is infinitesimally small and must be enlarged to be perceptible on a human level. Baruch Gottlieb, borrowing a term from Barad, describes an “onto-epistemological rift,” where the divide “between the invisible imperceptible light-speed world of electronic signals and the ‘human scale’ gravity bound... constraints of the conventional lived human experience, is the fundamental philosophical problem of contemporary aesthetics.”¹⁹⁹ The issue of scale, both spatial and temporal, is a crucial concern in negotiating relationality between humans and more-than-human matter and will be further discussed in the next chapter.

Because the *Echo* botanicals exist in the digital realm, they may be incorrectly conflated with being entirely virtual or immaterial. The widespread use of the word “virtual” came about in the 1990s with the development of “virtual reality” when the adjective virtual became associated with simulation or illusion.²⁰⁰ Yet, the virtual has been philosophically understood prior to the advent of the digital. It is not a question of material and immaterial, but the relation of the virtual to the actual. The virtual, understood philosophically, can be thought of as a force from which the “actual”

¹⁹⁶ Brian Massumi, “Notes on the Translation and Acknowledgments,” in *A Thousand Plateaus*, xvi.

¹⁹⁷ Cubitt, “Glitch,” 26.

¹⁹⁸ Menkman, *The Glitch Moment(um)*, 31.

¹⁹⁹ Baruch Gottlieb, *Digital Materialism: Origins, Philosophies, Prospects* (Bingley: Emerald Publishing Limited, 2018), 80.

²⁰⁰ Brian Massumi, “Envisioning the Virtual,” *The Oxford Handbook of Virtuality*, ed. Mark Grimshaw (New York: Oxford University Press, 2014), 55.

emerges. Following Henri Bergson, Deleuze sees the virtual as something real which can become actualised, a condition of becoming. As described by Massumi, “the virtual, as allied to potential, belongs specifically to the *formative* dimension of the real,” it “pertains to the power to be, pressing, passing, eventuating into ever new forms, in a cavalcade of emergence.”²⁰¹ The virtual is not a “space” of potential, it is “event potential.”²⁰² In terms of digital materiality, Anne Friedberg’s explanation of virtual images is helpful; they:

have a materiality and a reality but of a different kind, a second-order materiality, liminally immaterial. The terms “original” and “copy” will not apply here, because the virtuality of the image does not imply direct mimesis, but a transfer — more like a metaphor — from one plane of meaning and appearance to another.²⁰³

Echo is the movement from the plane of analogue to the plane of the digital; a territorialisation of environmental conditions and intensity into digital 3D objects that carry within their code visual characteristics of transduction.²⁰⁴

Here I want to highlight Daniel Rubinstein’s insistence that focusing on the semiotics of the digital image should be bypassed in favour of seeing the digital image in terms of its ongoing web of signals, connections, and “mimetic surfaces.”²⁰⁵ *Echo*, in terms of the virtual, contains ontological indeterminacy. Barad’s agential realism has expanded aspects of Niels Bohr’s philosophy-physics — notably indeterminacy — to be applicable beyond the hard sciences. Bohr believed that Werner Heisenberg made a fundamental error in his “Uncertainty Principle.” The issue is *indeterminacy* not uncertainty; in quantum measurement “it is not a matter of disturbing something and our knowledge is uncertain as a result, but rather there are not inherent properties and there are not inherent boundaries of things that we want to call entities before the measurement interaction.”²⁰⁶ For this reason, indeterminacy can be thought of as conditions of possibility that become actualised through intra-acting forces.

The visual aberrations of *Echo*, where plant structures are displaced and colours bleed into each other, point to the tangle of forces and materialisations within the digital

²⁰¹ Massumi, “Envisioning the Virtual,” 55.

²⁰² Brian Massumi, *Semblance as Event: Activist Philosophy and the Occurrent Arts* (Cambridge, MA: MIT Press, 2011), 17.

²⁰³ Anne Friedberg, *The Virtual Window: From Alberti to Microsoft* (Cambridge, MA: MIT Press, 2006), 11.

²⁰⁴ Massumi specifically positions digital technologies as having a “remarkably weak connection to the virtual” because of the “systemization of the possible.” It is through the analogue that digital technologies have a connection to the virtual. Massumi, *Parables of the Virtual*, 136, 137.

²⁰⁵ Rubinstein, “The Grin of Schrödinger’s Cat,” 34.

²⁰⁶ Karen Barad, “Interview with Karen Barad,” interview by Rick Dolphijn and Iris van der Tuin, *New Materialism: Interviews and Cartographies* (Ann Arbor: Open Humanities Press, 2012), 62.

system. This phenomenon speaks to what Rubinstein describes as the condition of digital images:

As the digital image on the computer screen is a configuration of particles that were clumped together by a computational process, it is significant that a quantum inspired understanding of photography suggests that apart from the forms of content such as perception, identity and representation, images are also forms of expression that contain open ended reflections on the nature of computation, indeterminacy and the limits of representation.²⁰⁷

This position implies that there is meaning in matter as much as there is in textual understandings that rely on semiotics and is suggestive of the more-than-representational possibility within photomedia.

Beyond the internal material events of *Echo* is the interplay of the 3D botanical objects with their human counterparts. I would like to sidestep a discussion about traditional notions of mediation here, if at all possible. The idea that technical media functions as an interface between the human subject and the object of encounter, a perspective of representationalism, can be supplanted with a more productive inquiry. Joanna Zylińska offers that “photomediation” are multiple and ongoing processes of “cutting through the flow of mediation, where ‘the cut’ operates on a number of levels: perceptive, material, technical, and conceptual... making cuts in the flow of imagistic data, of stabilizing data as images and objects.”²⁰⁸ Her description conjures Barad’s “agential cuts” enacted by apparatuses: “cuts that produce determinate boundaries and properties of ‘entities’ within phenomena... it is only through specific agential intra-actions that the boundaries and properties of ‘components’ of phenomena become determinate and that particular articulations become meaningful.”²⁰⁹

Imagine a double articulation of cuts in the *Echo* project. First, in the way that the technical media of the 3D scanner system and the environmental conditions of the botanical locations, together, faceted a digital translation. The next cuts occur in haptic encounters of the 3D flora objects. *Echo* is meant to be touched, played with, explored. A person experiencing any of the 3D models through the touchscreen devices will pinch, swipe, and draw their fingers across the screen to access different parts of the botanical forms — these acts of observation “cut” what is visually included or excluded from the 3D model. We might consider the cut to be the actualisation of the virtual. Agential and photomediatic cuts are boundary-making processes which echo Henri Bergson’s description of conversion from the virtual to the actual: “it would be necessary,

²⁰⁷ Rubinstein, “The Grin of Schrödinger’s Cat,” 38.

²⁰⁸ Zylińska, *Nonhuman Photography*, 158.

²⁰⁹ Barad, *Meeting the Universe Halfway*, 93.

not to throw more light on the object, but on the contrary to obscure some of its aspects, to diminish it by the greater part of itself, so that the remainder, instead of being encased in its surroundings as a *thing*, should detach itself from them as a *picture*.”²¹⁰

Echo is experienced through touchscreen displays which are both solid and fluid. The liquid crystal displays (LCD), backlit by light-emitting diodes (LED), are comprised of material that has both liquid and crystalline properties. Within the LCDs, electrodes associated with each screen pixel effect the liquid crystals, “when charged, they untwist their ‘relaxed’ helical shape, and the light is blocked, creating black pixels; uncharged they pass the light through, the degree of charge determining the luma signal.”²¹¹ The visible side of the screen has red, green, and blue filters which creates a colour range that consists of millions of colour combinations.²¹² Esther Leslie notes that liquid crystal, a state of matter, is found in the brain, DNA, and cell membranes; where “minerality of the liquid crystal, as it reflects glowingly on us, enhances our mineral selves, our copper, aluminium, cadmium, lead, silver, chlorine, indium and tin.”²¹³ LCDs are also intrinsically tied to the materiality of the Earth and are vestigial traces of “geophysical-political implications of metal.”²¹⁴ Jussi Parikka provides an astute reminder: “the next time you swipe your screen with your index finger, remember that it also ‘touches’ indium, necessary for touch screens. The media mineral list is long and is part of a longer production chain, which means that even if a given mineral is not necessarily ‘rare,’ it is bottlenecked by geopolitics of supply.”²¹⁵ The material implications of LCDs are vast and echo in our bodies and the Earth.

The touchscreen “collapses seeing and touching onto one surface.”²¹⁶ While *Echo* can be viewed on screens from a distance, touch activates the work. Leslie ascribes touchscreens with a kind of technological agency that “deploy the human — or any other — conductor, and its electrical charges and participation in electrical fields,” where “our electricity is abstracted.”²¹⁷ *Echo* is meant to be explored through the combination of haptic and optic sensation. As a rendered 3D model experienced on a two-dimensional plane, it is impossible to view simultaneously as a whole. To experience the work involves seeing the forms and textured surfaces of the 3D botanicals while using one’s hand to guide movement through and around the object (Fig. 33). In

²¹⁰ Henri Bergson, *Matter and Memory*, trans. Nancy Margaret Paul and William Scott Palmer (New York: Dover Publications, 2004), 39.

²¹¹ Cubitt, *The Practice of Light*, 97.

²¹² Cubitt, *The Practice of Light*, 97.

²¹³ Esther Leslie, *Liquid Crystals: The Science and Art of a Fluid Form* (London: Reaktion Books, 2016), 233–234.

²¹⁴ Jussi Parikka, “Dust and Exhaustion: The Labor of Media Materialism,” *CTheory* (October 2, 2013), <http://ctheory.net/articles.aspx?id=726>.

²¹⁵ Parikka, “Dust and Exhaustion.”

²¹⁶ Leslie, *Liquid Crystals*, 239.

²¹⁷ Leslie, *Liquid Crystals*, 239.

addition to the *Echo* botanical objects accessible on touchscreen devices, the project includes a video work showing a hand moving among and manipulating several 3D botanical specimens, one at a time. Fingers traverse the space, tracing across both representationally photographic and glitched forms. At times, encounters between the hand's movements with the digital 3D plants introduce a tension of agency. The flora forms resist the hand's guidance, and leap buoyantly from the fingers' embrace, signalling the material agency of the technology.



Figure 33. Rebecca Najdowski, *Echo* video stills, 2020, 12:15 looped video.

As a close-encounter, *Echo* might be considered what Deleuze and Guattari call “smooth space”: “the object of a close vision par excellence and the element of a haptic space.”²¹⁸ Smooth space is presented in contrast to distanced vision or “striated space.”²¹⁹ Haptic engagement does not necessarily denote physical touch; for Tim Ingold, it is less about identifying individual objects and instead attends “to the registration of subtle variations of light and shade, and the surface textures they reveal.”²²⁰ He explains that in smooth space, the eye “does not look at things but roams among them, finding a way through rather than aiming for a fixed target.”²²¹

To experience *Echo* is to roam among the terrain and topography of the 3D forms. Painterly smears of colour, abrupt endings of botanical forms, and unusual geomorphologies are discovered as a viewer explores the flora-as-landscape by pinching, swiping, scrolling, and zooming. Some of the botanical objects contain an uncanny double side which only exists in the digital 3D realm. For a few of the initial scans, I was not able to capture all sides of the forms. In those cases, the modelling process takes visual information from one side of the object and fills in that information onto the reverse side. Through computation the form is made whole, creating an inverse

²¹⁸ Deleuze and Guattari, *A Thousand Plateaus*, 493.

²¹⁹ Deleuze and Guattari, *A Thousand Plateaus*, 493.

²²⁰ Ingold, *Being Alive*, 132.

²²¹ Ingold, *Being Alive*, 132.

contour where the 3D form cannot be completed. Traversing among the 3D objects, these botanical landscapes conjure a terrain that lacks a horizon. A consequence of losing the stability of a horizon entails what artist Hito Steyerl describes as “a fall toward objects without reservation, embracing a world of forces and matter, which lacks any original stability and sparks the sudden shock of the open: a freedom that is terrifying, utterly deterritorializing, and always already unknown.”²²² The destabilising loss of Cartesian perspective brings about the more-than-representational capacity of the 3D forms.

Entropy Made Visible

The word “echo” recalls how sound signals can be repeated in an acoustic environment. The acoustic environment is a medium that translates and modifies sound waves. The sound waves of echos are not an exact replica of the original signals; instead, they undergo a transformation process. The *Echo* project takes its name from this signalethic translation. 3D botanical objects formed through movement of code and material configurations reinforce the way that material design of technology can impart meaning and significance.

Flowing, leaking, and disappearing into the distance. The lines of flight that break from structure and order are ruptures in the system, exposing the apparatus itself. It is no longer an invisible mechanism; instead, aberrations smudge and scratch the transparent illusion. The media cannot dissolve into a dematerialised clarity; as a consequence, we are reminded of photomedia’s capacity to abstract and objectify. Moreover, the entropic reality within the apparatus illuminates the fragile conditions of data and the complexities of photographic representation.

Echo is haunted by its own collapse. Oddly, this is one of its affordances. Across the threshold of stability and fixity is a flow of possibility. To use Benjamin’s phrase, “a geyser of new image-worlds hisses up.”²²³ When he wrote those words, Benjamin was captivated by new visions afforded by photographic technology. The difference here is that instead of working within the confines of designed affordances, which are in themselves exciting — it is a delight to experience the coalescing of 2D photographs and 3D data into image-objects that resonate with the spatial presence of the referent — in the *Echo* project I am working on the other side of known aptitudes. The entropic possibilities, the system noise, has the ability to enchant the viewer as much as the creative capacities of the technology.

²²² Hito Steyerl, *The Wretched of the Screen* (New York and Berlin: Sternberg Press, 2012), 28.

²²³ Benjamin, “News about Flowers,” 156.

Echo is about lack of control, accidental becomings, and most of all, the undulation of more-than-human agential capacities. This project emphasises an aspect of more-than-representational research that *Surfacing* established. It enables the agencies of environmental forces, and photomedia materials and processes, to create artworks. Working with material attributes and technological constraints of 3D scanning, *Echo* extends more-than-representational methods into digital creative practice. Moreover, the materialisation of signalitic movements and transformations within the *Echo* botanical models offers another aspect of the more-than-representational: a focus on practices that can express relationalities between nature, culture, and technology.

Chapter 4: Inverted Landscapes

In this next chapter, I channel the discussion into one that looks at how *Ambient Pressure*, *Surfacing*, and *Echo* come together in the thesis exhibition. *Inverted Landscapes* accesses the liveliness and entangled affects of the different creative projects undertaken by maintaining new materialist and posthumanist practices in the logic of the installation. In this chapter, I also return to my foundational concern — the implications of visually representing the Anthropocene. More-than-representational research is taken up as a way to reconfigure perceptions of nature through photomedia. The following analysis of the artworks focuses on how research approaches and discoveries made can be examined through the lens of apparatuses and hyperobjects.

I begin by looking at how Karen Barad's elaboration of agential realist apparatuses can be linked to media theorist Vilém Flusser's philosophy of the photographic apparatus.²²⁴ I discuss how my artistic strategies and outcomes exemplify Flusser's conception of "playing against the camera." The methods and techniques used in each of the research projects work against a facet of the photographic apparatus to undermine representational constructs of nature.

Moreover, the overarching, amorphous, and perplexing photographic apparatus is considered in terms of Timothy Morton's concept of "hyperobjects." Hyperobjects are spatiotemporally massive compared to humans.²²⁵ Through this concept, I make the case that the hyperobject of photomedia and the hyperobject of nature intersect with one another. Whereas my artistic approaches played against the camera to reveal something of the photographic apparatus, they also had the effect of "tuning to" photomedia, and its objectification and abstraction of nature, as a hyperobject.

Apparatuses

apparatus | *black box* | *entangled arrangements* | *material-discursive* | *open-ended practices* | *play against the camera* | *program*

Inverted Landscapes (2020), held at Margaret Lawrence Gallery in Melbourne from 17 to 21 February, brought together the three facets of this research: *Ambient Pressure*, *Surfacing*, and *Echo* (Figs. 34 and 35). The exhibition sought to address how photomedia has traditionally shaped nature — reducing the animate world to a representation, a distanced landscape to be considered. Through non-standard operations of the

²²⁴ Barad, *Meeting the Universe Halfway*; Flusser, *Towards a Philosophy of Photography*.

²²⁵ Morton, *Hyperobjects*.

technologies or misuse of the tools, the project aimed to expose the photographic conditions which objectify, abstract, and distance nature from our human experience.

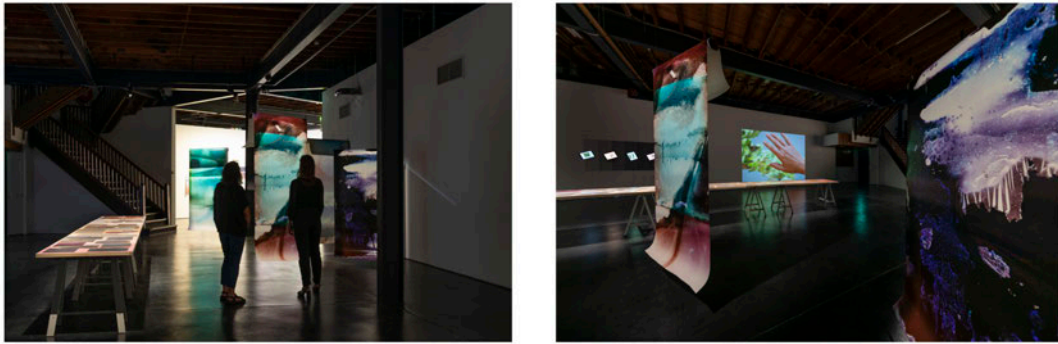


Figure 34. Rebecca Najdowski, *Inverted Landscapes*, featuring work from *Surfacing* and *Echo*, 2020, dimensions variable. Margaret Lawrence Gallery, Melbourne. Photographer: Mark Ashkanasy.

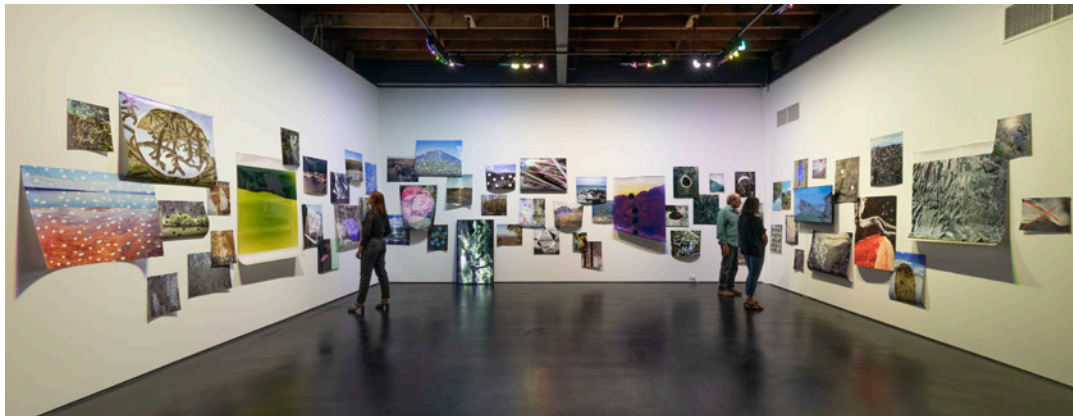


Figure 35. Rebecca Najdowski, *Inverted Landscapes*, featuring work from *Ambient Pressure*, 2020, dimensions variable. Margaret Lawrence Gallery, Melbourne. Photographer: Mark Ashkanasy.

While each of the separate projects of my research developed out of posthumanist and new materialist approaches to representational constructs by enabling non-human agencies and material affordances, I also aspired for the exhibition itself to be encountered as an entanglement of forces and phenomena. In Chapter 1, I proposed the idea that art created through photomedia processes enact a double articulation of deterritorialisation and reterritorialisation — of both the sensations and intensities of virtual forces as well as the actual geologic material of the Earth. Gilles Deleuze and Félix Guattari’s notion that art frames chaos in the “plane of composition” can be seen in *Inverted Landscapes*.²²⁶ In the exhibition, practices and conceptualisations of nature representation are ordered, slowed, and filtered into a coherence of art objects and

²²⁶ Deleuze and Guattari, *What Is Philosophy?*; Grosz, *Chaos, Territory, Art*.

operate on a “plane of signification,” as articulated by Ilona Hongisto.²²⁷ Qualities are extracted from the representational forces of the vast image universe and reterritorialised into the exhibition space. At the same time, another level of deterritorialisation occurs within the artworks’ material composition: ruptures within photo-representational structures, exposure of photo-materials to elemental forces, and pushing past technological affordances act as movements of “deframing which opens it up and breaks it open onto an infinite cosmos.”²²⁸ In this regard, *Inverted Landscapes* is constituted as territory, as described by Elizabeth Grosz: “the coming together both of spatiotemporal coordinates (and thus possibilities of measurement, precise location, concreteness, actuality) and qualities (which are immeasurable, indeterminate, virtual, and open-ended), that is, it is the coupling of a milieu and a rhythm.”²²⁹

I designed the installation of *Inverted Landscapes* to reflect the mesh of nature representation and my methodological trials of undermining those representations. Before elaborating on the exhibition decisions, I want to discuss the notion of apparatuses, a key feature and consideration of this research. This final chapter is an inquiry “into the ontological status of apparatuses, their level of existence.”²³⁰ The constitution of an apparatus is multifarious; it is the converging and mixing of material, social, cultural, institutional, and practical forces. Apparatuses are agential, instead of fixed and passive instruments, they are material arrangements that have agency.

Returning to Barad’s agential realism, for her, apparatuses “are not mere static arrangements in the world, but rather apparatuses are dynamic (re)configuring of the world.”²³¹ Barad’s agential realist apparatuses extend from physicist Niels Bohr’s notion and analysis of apparatuses and draw on Michel Foucault’s discursive practices. In the realm of quantum theory, Bohr described the entanglement of the measuring apparatus with the measured phenomena. Significantly, “apparatuses do not possess inherent outside boundaries limiting them to laboratory spaces or experimental practices.”²³² Features of Foucault’s discursive practices influence Barad’s elaboration, wherein the cultural, social, historical material conditions inform systems of knowledge. I suggest that the notion of apparatuses as dynamic, entangled practices that Barad describes is related to the photographic apparatus that Vilém Flusser articulated in *Towards a Philosophy of Photography*.²³³

²²⁷ Hongisto, *Soul of the Documentary*.

²²⁸ Deleuze and Guattari, *What Is Philosophy?*, 197.

²²⁹ Grosz, *Chaos, Territory, Art*, 19.

²³⁰ Flusser, *Towards a Philosophy of Photography*, 22.

²³¹ Barad, *Meeting the Universe Halfway*, 816.

²³² Barad, *Meeting the Universe Halfway*, 169.

²³³ Flusser, *Towards a Philosophy of Photography*.

One might conceptualise Flusser's photographic apparatus as a series of nested programs that involve the camera technology itself, the gesture of photographing, the distribution and reception of images, and a continuing upward through the hierarchy. Flusser outlines the relationship accordingly: "the camera functions on behalf of the photographic industry, which functions on behalf of the industrial complex, which functions on behalf of the socio-economic apparatus, and so on."²³⁴ Furthermore, in contrast to traditional images like paintings, technical images, such as photographs, are encoded through unseen processes that take place within the "black box" of the apparatus.²³⁵ These technical images are superficial surfaces in which humans do not reach depths to either decode or understand how they function within the apparatus. Instead, the fragmented surfaces coalesce into an experience of hallucinatory coherence.

Like Barad's agential realist account of apparatuses, there is the distinct activity of non-human agency. For Flusser, the camera's "program" has a particular agency that makes use of human operators in a feedback loop that enables the development and improvement of camera technology in service to the photographic apparatus as a whole.²³⁶ A consequential aspect of the camera's program is that photographers are unaware of the systemic agency that they are a part of. Photographers are functionaries within the system, "they are inside the apparatus and bound up with it."²³⁷ The apparatus is insidious because it is automatic.²³⁸ This automatisisation is camouflaged; it blends in with the day-to-day; the program is unrecognisable and invisible.

There is a way to seek freedom from the apparatus and the camera's program. In Flusser's words, "freedom is playing against the camera"; experimental photographers can attempt to "release themselves from the camera, and to place within the image something that is not in its program."²³⁹ I argue that the focus of an experimental approach is to reveal or make visible an aspect of the apparatus. By drawing attention to the physical, material mechanism of the camera, fracturing the logic of the black box, prying open a seam, then perhaps some of the ostensibly immaterial programmatic functions of the photographic apparatus can be illuminated.

The various methods used in this research to undermine photomedia's objectification of nature all "play against the camera." Both literal and metaphorical, it is an artistic strategy that attempts to imbue the camera's program with considered intentionality and to work against its restrictions. The creative outcomes discussed in this exegesis play

²³⁴ Flusser, *Towards a Philosophy of Photography*, 29.

²³⁵ Flusser, *Towards a Philosophy of Photography*, 16.

²³⁶ Flusser, *Towards a Philosophy of Photography*, 46.

²³⁷ Flusser, *Towards a Philosophy of Photography*, 27.

²³⁸ Flusser, *Towards a Philosophy of Photography*, 74.

²³⁹ Flusser, *Towards a Philosophy of Photography*, 80–81.

against the camera with the aim to unsettle an aspect of the photographic apparatus. My work specifically zeros in on the symbolic register of nature representation. I approached the activity of undermining the materiality and representational functionality of photomedia from different angles. Whereas with *Ambient Pressure* I unambiguously manipulated the material structure and standard procedures of practices, like scanning, with *Surfacing* and *Echo* I have set up artistic working parameters at the edge of functionality of the technology.

Ambient Pressure acknowledges and exploits the mechanism of nature representation within the apparatus. I have overtly placed “within the image something that is not in its program.”²⁴⁰ The physical modifications and obstructions on the photographic film and prints are actual and metaphorical agential factors drawing attention to the apparatus of photographic material. The manipulation of the photographs shows how photography in itself manipulates. The results are photographs that register invisible forces like the historical symbolism of nature and the cleaving fissure between humans and non-human nature within Cartesian perspective. The procedural manipulations corrode the transparency of the frame of landscape and nature photography and bring in to focus the objectifying properties.

In the *Inverted Landscapes* exhibition, the images of *Ambient Pressure* were inflected with varying techniques and methods of haptic manipulation. Within the gallery space, sixty photographs pinned to the wall, along with three videos on monitors, were installed as an unsystematic constellation (Fig. 35). Elements of diffractive methodology, as discussed in Chapter 1, were carried over from my collaborative project, *Interference Pattern*, with Vivian Cooper Smith. In particular, I used a similar lighting design that harnesses additive colour mixtures and their responses to physical interferences. Diffraction patterns occur as a result of obstruction. Combinations of red, green, and blue light, as well as yellow, cyan, and magenta light, combine as white light. Where prints curled or protruded from the wall, they acted as obstructions for the light waves, forming multilayered coloured shadows (Fig. 36). In this way, the installation materialised as diffractive methodology. In my work with Smith, we were interested in registering patterns — the effects of difference — between our practices, by reading our work through one another. In *Inverted Landscapes*, the patterns of difference were seen when the marks, abrasions, and occlusions that I made and the original nature imagery were read through one another. Likewise, when the aesthetic manipulations of individual works were diffractively read through one another across the series, the installation congealed into a pattern that pierces the durability of representation.

²⁴⁰ Flusser, *Towards a Philosophy of Photography*, 81.

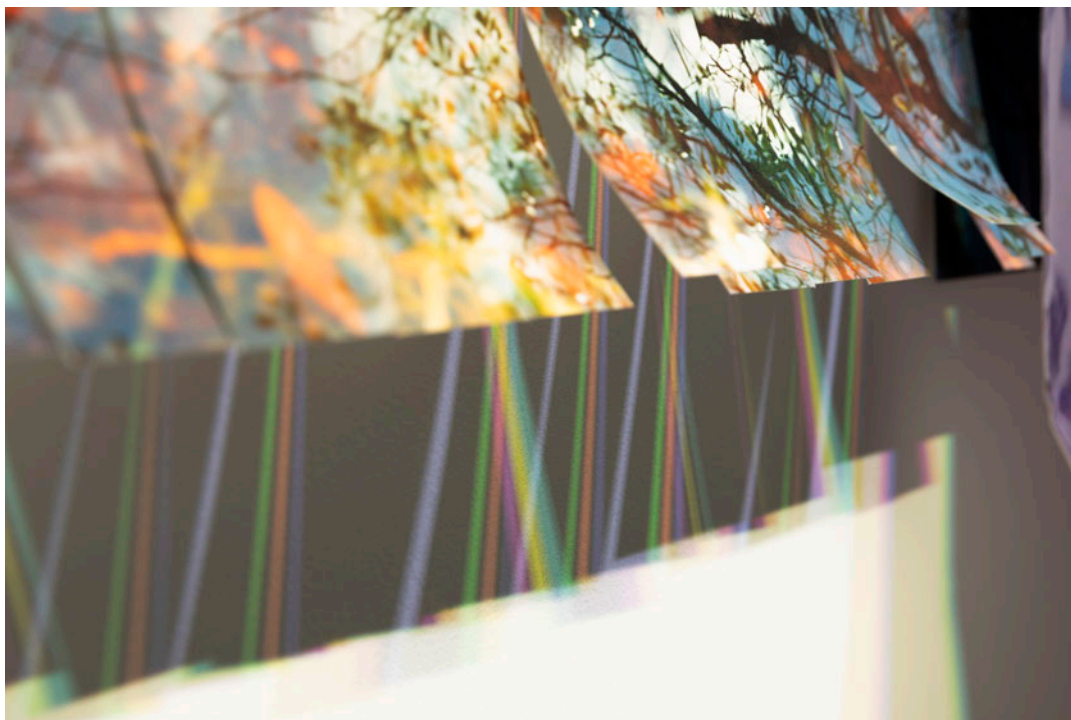


Figure 36. Rebecca Najdowski, detail of *Ambient Pressure* in the exhibition *Inverted Landscapes*, 2020, pigment print, coloured gels, dimensions variable. Margaret Lawrence Gallery, Melbourne. Photographer: Mark Ashkanasy.

The benefit of using a diffractive methodology is directly tied to the dynamism of agential realism. Diffractions are “untimely,” where time is “non contemporaneous with itself,” and “‘now’ is not an infinitesimal slice but an infinitely rich condensed node in a changing field diffracted across spacetime in its ongoing iterative repatterning.”²⁴¹ The images from *Ambient Pressure* are processes of thought-in-action that extend beyond a singular timeframe. A sedimenting of moments and activities are present in the images: there is the initial instant of capture, or the fossilisation of that referential moment, coinciding with the later activity of the manipulations of photographic film and prints, and the ensuing encounter of the images as an assemblage. The simultaneity of sedimented layers is a diffractive multiplicity that resonates with an animated lifeworld.

In *Surfacing* and *Echo*, I deliberately played against the camera, counter to both the analogue and digital technological apparatuses of photography. The creative trials were experiments with the affordances and limitations of imaging technologies. In both cases, artworks were made by using the technologies in ways that were contrary to their designed intention. I was interested to discover what might arise through making works outside of established protocols of analogue photography and 3D scanning. With *Surfacing*, the methods connected back to a more primordial experience of photography,

²⁴¹ Barad, “Diffracting Diffraction,” 169.

whereas *Echo* revealed the deviations and instabilities of data processes which are often taken to be precise, stable, and coherent.

Photographic imaging is distilled into nascent properties in the *Surfacing* experiments. More than a play against the camera, the camera is removed entirely. *Surfacing* explores the threshold of chemical photography outside of the camera. The tool most associated with photography, the image-capture device, is gone. Moreover, the development stage was fundamentally altered from typical chemical processes. In *Surfacing (gelatin silver)* the development process was the physical exposure to heat, vapour, and chemistry of geothermal activity in the field. In *Surfacing (chromogenic)*, the prints were made in a darkroom through a standard enlargement and printing process; however, the film itself was developed through exposure to salt, algae, and bacteria laden water. And still, possibly the most significant conventional aspect of photography that was modified was photographic likeness. The link to an icon sign, or the visual resemblance between image and subject, was removed along with the camera.

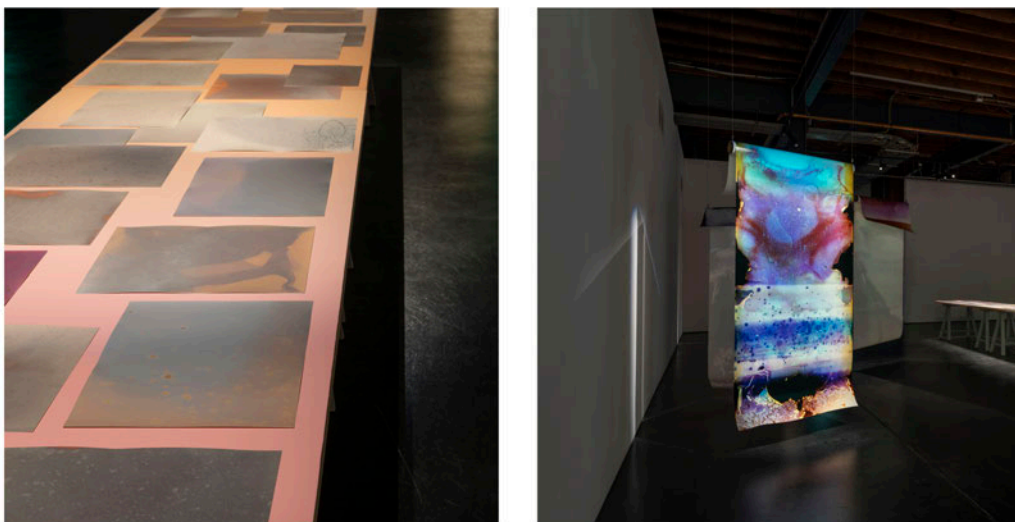


Figure 37. Rebecca Najdowski, detail of *Surfacing (gelatin silver)*, left, and detail of *Surfacing (chromogenic)*, right, in the exhibition *Inverted Landscapes*, 2020, gelatin silver solar photographs on a table, chromogenic prints, dimensions variable. Margaret Lawrence Gallery, Melbourne. Photographer: Mark Ashkanasy.

Surfacing focuses on how photographic materiality has direct relations with the Earth. When I was designing the exhibition environment of *Inverted Landscapes*, I considered what installation strategies would encourage a viewer to encounter the work as mineral flows, congealing of agency, and material affordances of the photographic processes. It was important that the artworks were not confined to traditional framing techniques in the same way that the image-making process of *Surfacing* was free from the camera's frame. I resolved to present forty-two gelatin silver solar prints from *Surfacing (gelatin silver)* on a long table in the centre of the gallery room. The prints were arranged from

vivid pink and coral hues to more subdued greys and purples (Fig. 37). My aim here was to create a view of the work where the tonal shifts across the different prints recalled the atmospheric conditions of the geo-bio-chemical forces harnessed in making the work. *Surfacing (chromogenic)* works were mounted onto tubes suspended from the ceiling at varying heights. The five mural-size photographs hung some distance from the walls to entice gallery visitors to take in all sides of the prints and further circumvent traditional modes of presenting photographs (Fig. 37). Draping the prints over the tubes made it possible to highlight the curvature of the chromogenic paper and the uneven cut lines acquired as I hand-cut the large swaths of light-sensitive paper from their rolls in the pitch-black darkroom (Fig. 37). *Surfacing* registers affects of varying temporal encounters of natural phenomena and photo-materials. Consequently, I was attentive to working with the materiality and agential capacities of both the gelatin silver solar prints and the chromogenic prints to feature their mineral and chemical expression.



Figure 38. Rebecca Najdowski, *Echo* in the exhibition *Inverted Landscapes*, 2020, six 3D models on iPads, digital video projection. dimensions variable. Margaret Lawrence Gallery, Melbourne. Photographer: Mark Ashkanasy.

Echo, likewise, enables the agencies of non-human nature and photomedia technology, in this case with digital media. Here, seeking freedom from the apparatus by playing against the camera occurs as I attended to the inherent limitations of the technology. The smeared, displaced, and ruptured 3D botanical models are an actualisation of the instability of data and the intensity of environmental conditions. With *Echo*, my intent was to invite gallery visitors to directly explore the “flawed” landscapes of the six 3D models on touchscreen tablets (Fig. 38). The 12.9-inch (33-cm) tablets were mounted askew, referencing the askance quality of the 3D plants. Alongside the touchscreen devices was a large projected video depicting a hand traversing another six 3D botanical models, one at a time (Fig. 38). The projection served as an instructional video, indicating that the flora forms on the mounted devices were available for visitors to haptically engage with. The backdrop to the mounted devices was an adhesive graphic, a stepped gradient of grey that referenced abrupt edges of pixels, discrete forms that

contrast with the continuity of analogue forms, as well as darkroom test prints in which increasing exposures are made to light-sensitive paper to calculate the optimal exposure of a darkroom print. Located within the same gallery space as *Surfacing*, the installation of *Echo* provided a digital, and at times more aesthetically representational, counterpart to *Surfacing's* seemingly abstract materialisation.

Inverted Landscapes enfoldes Barad's elaboration of agential realist apparatuses as dynamic and entangled material arrangements with Flusser's envisioning of the photographic apparatus as an automatic and pervasive system which involves human gestures. The vision of the apparatus that Flusser has presented warrants a thoughtful approach by humans, to understand how human agency, material agency, and technological agency are co-constitutive. Baruch Gottlieb puts it this way: "technology is not separate from or invented by humanity but already emergent in the relation between ourselves and the world."²⁴² This form of posthumanism repositions the human and humanity as unavoidably entangled with other forces.

Hyperobjects

*abolish aesthetic distance | Anthropocene | age of asymmetry | disturbing intimacy |
hologram | nonlocal | tuning to*

At the same time that photomedia has become more pervasive, so too has the climate crisis. This link is made more imperative because photomedia not only affirms ideological perspectives, it also influences the development of ideologies themselves. How we picture the Anthropocene matters a great deal — it affects our human response.²⁴³ The gravity of how the current climate crisis is visualised can be seen in the *Guardian's* reevaluation of journalistic imagery that depicts environmental disasters as "remote and abstract."²⁴⁴ One of the challenges of visualising the Anthropocene through photography is that it frames and abstracts the events and effects as something that appear to take place "over there," outside of our daily experience.

However, the lacuna between us and perceptions of the climate crisis is a mirage. The actuality of the Anthropocene upwells in our habitat too. As we entered the new decade, the climate crisis was made more palpable for me. For a couple of weeks over the holiday break, I travelled with my partner, camping and exploring parts of Victoria and

²⁴² Gottlieb, *Digital Materialism*, 146.

²⁴³ See, for example, Daniel A. Chapman, et al., "Climate Visuals: A Mixed Methods Investigation of Public Perceptions of Climate Images in Three Countries," *Global Environmental Change* 41 (2016): <https://doi.org/10.1016/j.gloenvcha.2016.10.003>.

²⁴⁴ Fiona Shields, "Why We're Rethinking The Images We Use For Our Climate Journalism," *The Guardian*, October 18, 2019, <https://www.theguardian.com/environment/2019/oct/18/guardian-climate-pledge-2019-images-pictures-guidelines>.

New South Wales. About a week into the trip, as we made our way to the south coast of New South Wales, the low-grade fear of fire that I had felt the entire trip intensified. Out of the car window, I could see a massive plume of smoke in the distance that morphed into heavy contours resembling a storm cloud. We continued toward the beach campground where we would spend the night; dusk was setting in. At the campground and on the beach, charred eucalyptus leaves fell out of the sky. As the evening wore on, darker, larger ashes slowly accumulated on our tent. That night we awoke at around 3:30 a.m. to the sound of the other campers packing up. I suddenly became aware of my heart. Sombre and efficient, the campground of about twenty-five tents packed up and was ushered out by Fire and Rescue. It was early morning New Year's Eve. Many of the roads were closed and, as instructed, we headed to the nearest urban area, the seaside town of Merimbula. As dawn turned to midday the sky grew progressively warmer in colour, a glowing orange pervaded everything. It was a surreal scene, evacuees and tourists did not know what to do with themselves, so they did what they were accustomed to. They wandered the beaches, went out for coffee, and ate ice cream immersed in an amber haze. The colour tone became an undercurrent of fear amidst the everyday. The Black Summer bushfires were devastating and terrifying in real and existential ways; an ordeal that made the climate crisis a sensory, tangible experience for me.

Yet, as I describe with these words the atmosphere of an environmental emergency, I am struck by the impossibility of explaining, or comprehending for that matter, the total entity. It is beyond expression; it is more than representational. Timothy Morton argues that one of the reasons humans struggle with global warming is because it is a hyperobject.²⁴⁵ Morton classifies particular objects or "entities" as *hyperobjects* because they are "massively distributed in time and space relative to humans."²⁴⁶ Entities such as styrofoam, the Florida Everglades, or a black hole are all hyperobjects.²⁴⁷ Because they are of a spatiotemporal scale that exists beyond the limits of human scale, "we can't see to the end of them."²⁴⁸ We can only experience small slices of a hyperobject, not the whole thing at once, and so they "appear nonlocal and temporally foreshortened."²⁴⁹ Adding to this uncanny quality of hyperobjects is an emphasis that time as connecting moments from the past into the future is an "aesthetic phenomenon, not a deep fact that underlies things."²⁵⁰ These features of hyperobjects resonate with what I have been

²⁴⁵ Morton is specific in his use of the term "global warming" versus "climate change." For him, climate change is a rebranding that has seen decreased levels of concern, furthermore, climate change is a symptom of global warming and should not be a substitute. Morton, *Hyperobjects*, 7–8.

²⁴⁶ Morton, *Hyperobjects*, 1.

²⁴⁷ Morton, *Hyperobjects*, 1.

²⁴⁸ Morton, *Hyperobjects*, 55.

²⁴⁹ Morton, *Hyperobjects*, 70.

²⁵⁰ Morton, *Hyperobjects*, 67.

grappling with, the spatiotemporal enigmas of photomedia and the Anthropocene. Because hyperobjects are entangled arrangements, I would like to put forward that the apparatus of photomedia is a hyperobject. If photomedia can be seen in all its vividness as a hyperobject, then we might begin to comprehend its spatial and temporal stickiness. An object, within an object, within an object, within an object.

The direct experience of the Black Summer bushfires solidified my perspective that much of the art made to inform viewers of the ongoing catastrophic effects of climate change might not be eliciting intended action. Artwork that addresses the conditions of the Anthropocene has increased over the past decade, highlighting the alarm that artists and other cultural workers experience in our earthly predicament.²⁵¹ Many of these creative projects communicate about issues such as species loss, overwhelming pollution, or rising sea levels. Morton has coined the current epoch the “Age of Asymmetry” because “the asymmetry between action and reflection gives us a strong feeling of the uncanny” where “increasing science is not increasing demystification,” instead, an “ethical asymmetry is a function of an ontological asymmetry between humans and nonhumans.”²⁵² How, then, can artists form artworks that are more ontologically connected, similar, or aligned with non-humans? For Morton, art in the Age of Asymmetry should “be a *tuning* to the object.”²⁵³ These tuning approaches abolish “aesthetic distance,”²⁵⁴ create “disturbing intimacy,”²⁵⁵ and “[accommodate] ourselves to things that are viscous and sticky and slow.”²⁵⁶ With these approaches in mind, the projects discussed in this exegesis *tune* to the hyperobject of photomedia and the complex entanglement with nature. To address the intersecting hyperobjects of photomedia and nature, Derek McCormack’s affirmation in “Devices for Doing Atmospheric Things” is useful here:

it is less a matter of collecting or extracting something from the world than of making the variations of the world palpable and potentially actionable... it’s about figuring out if what we are doing, or what we need to be doing, is amplifying, attuning, defamiliarizing, drawing out, following, foregrounding, gathering, holding in place, providing some constraint, tracing and tracking, scattering.²⁵⁷

²⁵¹ See, for example, Heather Davis and Etienne Turpin, eds., *Art in the Anthropocene: Encounters Among Aesthetics, Politics, Environments and Epistemologies* (London: Open Humanities Press, 2015); and Pedro Gadanho, ed., *Eco-Visionaries: Art, Architecture, and New Media After the Anthropocene* (Berlin: Hatje Cantz, 2018).

²⁵² Morton, *Hyperobjects*, 160.

²⁵³ Morton, *Hyperobjects*, 174.

²⁵⁴ Morton, *Hyperobjects*, 181.

²⁵⁵ Morton, *Hyperobjects*, 189.

²⁵⁶ Morton, *Hyperobjects*, 189.

²⁵⁷ McCormack, “Devices for Doing Atmospheric Things,” 85.

Ambient Pressure resonates with the construct of representation and the objectification of nature through photomedia. For example, the material disruptions used in the project resonate with destructive human activity. In *Inverted Landscapes*, while most of the works that comprised *Ambient Pressure* were prints, three videos pieces were incorporated into the installation. Two of the videos nestled among the prints extended the image alterations into durational form. The third video piece, *Ambient Pressure (black hole)* (2020–ongoing), was presented on a mounted monitor on a separate wall from the rest of the *Ambient Pressure* installation. The video cycles through seventy-six landscape photographs with a hole punched out of each in approximately the same location (Fig. 39). To watch the video, the viewer must become actively involved in experiencing the work. Whereas with *Echo* gallery visitors were encouraged to physically explore digital 3D models with their hands, with *Ambient Pressure (black hole)* they negotiate their ocular perception. The effect of looping landscape images in quick succession, each marred with a black hole, is two concurrent and contrasting movements. The first is the flickering nature imagery; the second is the subtle hovering of a dark orb. As one views the video, it is almost impossible to observe with attention the two simultaneous movements. Instead, a viewer chooses to focus on either the flashes of nature or the shifting black hole. This friction animates the impossibility of comprehending the totality of the hyperobject, the totality of the entanglement of the climate emergency and representational constructs of nature.



Figure 39. Rebecca Najdowski, *Ambient Pressure (black hole)* video stills, 2020, looped video.

Tuning to a hyperobject involves abolishing aesthetic distance. *Surfacing* removes the gap in landscape photography. Whereas traditional landscape imagery is inherently distanced, in *Surfacing* there is no space between the forces and phenomena of the earth and the photographic image. The aesthetic distance is compressed to be a direct and intimate encountering of the Earth and the photo-materials. In this way, *Surfacing* also resonates with temporalities and flows that are more-than-human. The mineral expressions inscribed on the surface of the prints are a congealing of agency that alludes to geologic timeframes. Silver halide particles suspended in the photo-materials carry relations with earth processes and materials that echo deep time. Embedded within extended temporalities is the condition of entropy. *Surfacing (chromogenic)* in particular, taps into entropic movements; visualised as the corrosion of photographic emulsion on the surface of prints. While these aesthetic flows reflect the inevitable wearing down and

dissolving of matter, the tuning to more-than-human timescales also connects to time as more than measurable chronology. *Surfacing* is a geological-becoming that resonates with “temporal undulation,” or the strange spacetime of hyperobjects.²⁵⁸

Echo also registers the conditions of entropy in its material structure. The inability to accurately translate environmental compositions into digital 3D forms makes visible the instability of data. Aesthetic aberrations reveal a digital materiality and information gaps betray the illusion of precision and stability of any given system. *Echo* tunes to “the constant reemergence of entropy in the interstices of devices designed to curtail and command the excess of light.”²⁵⁹ As viewers explore the uncanny forms of flora-as-landscape, they are pulled into the material constructs of a representational system. The 3D botanical forms flow and leak, exposing the visual signature of entropy within signaletic material.

The disturbing intimacy of *Echo* involves scale as well as structure. Embedded within photomedia are relations to, and possibilities of, varying scales. Andy Fisher points out that there are always “multiple, different and overlapping scalar operations and scaled processes at work in each instance and every form of photography.”²⁶⁰ Both analogue and digital photomedia involve “photon-scale events.”²⁶¹ The works from *Echo* are digital objects that are nonlocal and can be experienced simultaneously in multiple locations. Moreover, when not materialised on a screen or through a projection, their contours are latent when in their discrete coded form. In this way, *Echo* reflects the ubiquitous and algorithmic character of all digital photomedia. The tension between infinitesimally small discrete data and the incalculable ubiquity of photographic images connects to the strangeness of spacetime within hyperobjects. The dimensions of these two aspects of photomedia are like a fractal pattern — there is potentially infinite movement in both directions of scale.

It can be helpful to imagine the hyperobject of photomedia, and its abstraction and objectification of nature, as a hologram. A “mesh of interference patterns” where information about the whole is contained within each piece: the parts are non-contemporaneous and nonlocal, but behaviourally connected.²⁶² When it comes to nature and its abstraction into Nature via photomedia, the tuning-to process is akin to separating the signal from the noise. The movement resembles capturing a noise print. Properties and characteristics of noise (in this case, Nature as objectification) are

²⁵⁸ Morton, *Hyperobjects*, 55–68.

²⁵⁹ Cubitt, *The Practice of Light*, 3.

²⁶⁰ Andy Fisher, “Photographic Scale,” in *On the Verge of Photography: Imaging Beyond Representation*, eds. Daniel Rubinstein, Johnny Golding, and Andy Fisher (Birmingham, UK: ARTicle Press, 2013), 162.

²⁶¹ Cubitt, *The Practice of Light*, 245.

²⁶² Morton, *Hyperobjects*, 46.

recorded so that those very properties and characteristics can be separated from the signal (in this case, nature — the real thing). *Inverted Landscapes* recasts landscape and nature photography as a noise print, it tunes to and undermines the noise, the objectification.

Medianatures

In light of elaboration on apparatuses and hyperobjects as entangled material arrangements, I would like to return to Jussi Parikka's idea of medianatures; the co-constituting relationality of humans, non-human nature, and technological media.²⁶³

This concept circles back to the foundational concern of this research — the material and political implications of visually representing the Anthropocene. The terrain of the climate crisis that I experienced during Black Summer is a world away from the abstract and transcendent macOS landscapes on my computer screen. Even though minor compared to the experiences of many humans, creatures, and ecosystems that were brutally impacted by the bushfires, my encounter made salient for me the need to reconfigure how humans engage, relate, and think of non-human nature through photomedia. *Inverted Landscapes* aims to bring the viewer inside of the black box, to face the forms and fractures of nature representation. While my work does not directly address the specifics of the climate emergency, it is about decisively undermining the objectification and distancing of non-human nature from the human experience.

Taking up more-than-representational research is one way to reconfigure static and fixed perspectives of photomedia. Inflected with the timbre of non-human spatiotemporal scales, *Inverted Landscapes* attempts to register the effects of mineral flows, congealing of agency, and material affordances of photomedia. The impulse to “play against the camera” was to enact techniques that undermined photomedia's representational structure and objectifying function, to let spill some of what takes place in the black box. Moreover, non-human agencies along with material affordances and limitations were enabled and advanced. From the artistic procedures, a bloom of sensation and signification actualises. These methods and approaches also had the effect of “tuning to” photomedia as a hyperobject, and the ramifications of Nature as abstraction. In turn, the processes, movements, and artistic outcomes enable ways to see anew the relationalities between culture, technology, and nature present in photomedia phenomena. Dynamic and entangled relationalities involve both the concrete and the abstract. Mineral compositions, chemical processes, and technological thresholds tangle with

²⁶³ Parikka, *A Geology of Media*.

conceptions, representations, and indeterminacy. These are the tensions that animate and shape this project.

Conclusion

Photons bouncing off quivering leaves, branches, flowers, and succulent forms. Patterns of light and shade. Time. Electromagnetic radiation. High-salinity environments, extremophile bacteria, algae, geyser plumes, steam vents. Infrared wavelengths, liquid crystals, light-emitting diodes, indium. Silica, silver halide particles, gelatin emulsions, dye couplers, dye clouds, gold toner. Oxidisation. Darkroom enlargers, condensing lenses, yellow, cyan, and magenta filters, processing chemistry. Steel blades, markers, hole punchers, plastic, bleach, coloured photographic gels, grains of magnesium iron silicate, prisms of silicon and oxygen. Cotton, inkjet pigments, piezoelectric material. Spatialising 2D images, compositing, enlargements, diffractions. This list names just some of the materials and processes assembled in my research. Throughout my project, I acknowledged matter as compositions and co-agencies to affirm connections, attunements, and imaginings of how humans, non-human nature, and photomedia technology are inherently entangling, morphing, actualising.

Inverted Landscapes: Photomedia and the More-than-Representational is attentive to the possibilities that can arise when attuned to the material agency of the world. The central question motivating my inquiry, *how can photomedia — a tool for framing, objectifying, and abstracting nature — be undermined to imagine new relationalities between culture, technology, and more-than-human nature*, permeates the methods I used to make artworks and the theoretical ideas that underpinned my practice. The perceived transparency of photomedia, its window-onto-the-world quality, has profound implications for its objectifying depictions of nature. In this research, I sought to examine the representational thresholds and the conditions of information translation in both analogue and digital photomedia. Ultimately, this project contends with the paradox that photomedia has a neutral and transparent characteristic, yet photomedia of nature are culturally inscribed constructions. Deborah Bright importantly suggested that landscape photography could be redeemed if the practice could be used as a form of critique, to “question the assumptions about nature and culture that it has traditionally served.”²⁶⁴ Thirty-five years later, I have taken up her call.

“Staying with the trouble” grounds this work. Put forward by Donna Haraway, staying with the trouble comes out of a frustration with two different positions related to the Anthropocene.²⁶⁵ One is that it is easy to dismiss the challenges of the climate crisis with a strong faith in technological fixes, that somehow technology will come to our rescue. The other more debilitating response is the position that it is too late to do anything

²⁶⁴ Bright, “Of Mother Nature and Marlboro Men,” 140.

²⁶⁵ Haraway, *Staying with the Trouble*, 2–3.

meaningful about our predicament. Haraway points out that “trouble” comes from the French verb which means “‘to stir up,’ ‘to make cloudy,’ ‘to disturb.’”²⁶⁶ By undermining and by working-with photomedia, Haraway’s invocation to “trouble” has shimmered through my practice:

Our task is to make trouble, to stir up potent response to devastating events, as well as to settle troubled waters and rebuild quiet places... staying with the trouble requires learning to be truly present, not as a vanishing pivot between awful or edenic pasts and apocalyptic or salvific futures, but as mortal critters entwined in myriad unfinished configurations of places, times, matters, meanings.²⁶⁷

The suggestion that using photomedia of nature to “trouble” itself can be a productive methodology to unfix and make visible some of the problematic aspects of photographic framing.

I argue that the *more-than-representational* research methods that I used throughout this research contribute to a reconfiguring of how nature is conceptualised. As a research style, it works from within representation to make visible representational structures. The various methods and techniques harness multiple registers of thought, including sign and signification, and affect and sensation. More-than-representational strategies enable non-human agencies and material affordances in the formation of creative works. Through more-than-representational practices the possibilities of relations between nature, culture, and technology are expressed.

Inspired by non-representational research styles that concentrate on the liveliness of the world and its potentials through thought-in-action, I first looked to ways that representational structures of photographic film and prints could be materially and conceptually unsettled. With *Ambient Pressure* I haptically manipulated and modified conventional nature imagery intending to fracture the logic of the photographic frame as something neutral and invisible. Materialist philosophies informed *Ambient Pressure* and shaped the more-than-representational methods that I developed. The affirmative openness of Karen Barad’s diffractive methodology, its material-discursive unfolding, was foundational to the configuration of *Interference Pattern*, my collaborative work with Vivian Cooper Smith. Other theorists, Gilles Deleuze and Félix Guattari, along with Elizabeth Grosz, provided a philosophical basis for conceiving of how virtual forces are filtered and cohere into art. Ilona Hongisto’s notion of the aesthetics of the frame furthered that discussion into the realm of photomedia, where matter’s emergent expression exceeds representational forms within the frame. My artistic inquiry was formed by the research methodology of more-than-representational. I worked from

²⁶⁶ Haraway, *Staying with the Trouble*, 1.

²⁶⁷ Haraway, *Staying with the Trouble*, 1.

within nature representation, defamiliarising typical landscape imagery with abrasions, occlusions, and cuts to draw attention to the cultural frame. Moreover, an outcome of my physical manipulations was that *Ambient Pressure* generated multiple registers: that of signification and also affect and sensation.

I embraced the geo-chemical material of photomedia by examining how photomedia has direct correspondences with earth processes like chemical interactions and geological materials. The non-human agencies of environmental forces and conditions and analogue photo-materials were harnessed in the production of *Surfacing*. I used camera-less methods that exemplify the more-than-representational; enfolding light-sensitive materials with earth processes created images that are beyond representation. Instead of depicting the scenery of a given location, *Surfacing* is a congealing of agency and a materialisation of photographic and planetary forces. Barad's agential realism provided expanded notions of agency and time to materially think with. Similarly, engaging in critically intimate observations, instead of critical distance, became a helpful way to think through my practice. Jussi Parikka's notion of medianatures was introduced as a vital concept that envisions and affirms nature and technical-media-culture as entangled phenomena. I used critical intimacy, agential realism, and the enmeshment of nature, media, and culture to challenge limited conceptions of photographic semiotics. By removing the distance between the photo-materials and the environment, the work of *Surfacing* articulated possible ways to reconfigure what landscape photography can be. Cartesian perspective was negated as the works recorded flux of earthly matter, time, and energy.

The significance of material affordances and thresholds of photomedia was exemplified in the creative exploration of *Echo*. I collaborated with sensing technology, unearthing imaging thresholds that reveal the instability of data, and, in turn, highlight the instability of representation. I used a scanning device to record plant forms, but in environmental conditions that exceeded the capacity of the sensor, resulting in 3D botanical models with aesthetic aberrations. Whereas with *Surfacing* the methods and materials concentrated on enabling the more-than-human forces of nature and analogue technology, in *Echo* I turned to techniques that enable the more-than-representational capacity of digital technology. I evoked media theory discourse and materialist philosophy to help underscore the intensive links between digital material behaviour, signalitic movements, glitch, indeterminacy, and virtuality. The theoretical discussion asserted a variety of facets through diverse perspectives expressed by Barad, Deleuze and Guattari, Brian Massumi, Gilbert Simondon, Anna Munster, Walter Benjamin, Sean Cubitt, Rosa Menkman, Daniel Rubinstein, Joanna Zylińska, Esther Leslie, and others. The artistic outcomes of enabling non-human agencies and material affordances — within both the environmental and technological conditions — are a series of 3D

botanical models that embody the precarious aspects of data. In these artworks, the more-than-representational materialised as a terrain of botanical signaletic material that could be traversed as digital landscapes.

Matter is emergent. Intensities and forces from geophysical locations are inscribed, and transformed, in the materials and movements of photomedia. The exhibition *Inverted Landscapes* aspired to tap into this emergence while also rupturing and reimagining representations of nature. My methods undermined aspects of how nature has been objectified, distanced, and abstracted through photomedia. A more-than-representational ontology seeped through, resulting in artworks that are inverted: what was once transparent, distanced, and fixed became flipped and reversed. By defamiliarising representations of nature, the apparatus was revealed; bringing forth attentiveness to how humans, non-human nature, and imaging technologies are entangled.

Humans have struggled to adequately respond to the arising issues of the climate crisis. It is undeniably clear that there is an asymmetry between thinking and responding. My research recognises the need for a significant shift in perspective and approach — a movement toward a different plane of consciousness — to better respond to the effects of the Anthropocene. In contrast to artwork that provides data and visual information about the climate crisis, my work tunes to and critiques the issue of nature as representation, nature as object.

This research generates new terrains and formations — inverted landscapes if you will — that are situated and unfixed, relying on a material world that is open and dynamic. In addition to reconfiguring perceptions of nature through the lens of photomedia, the intention of my work is to reduce the distance between ourselves and non-human nature. My work advances a different consideration of how photomedia can be used to question long-held assumptions about representation and authority and to challenge assumed primacy of human agency over the non-human world.

Staying with the trouble involves visioning futures from a down-to-Earth mesh of intra-relations. There is considerable work required to address the myriad of problems that are arising out of the Anthropocene. The work that has emerged from this research offers an initial attempt to reconfigure conceptualisations of, and relations with, nature. In conjunction with scientific research and political actions, artists can adopt, adapt, and create new approaches that stay with the trouble of our predicament, but also offer new, potentially radical, ways to impress forms of action. More-than-representational methodologies could be a productive direction for future research related to photomedia. The diversity of my methods in undermining material semblance and representational structures across analogue and digital photomedia can still be expanded

and modified. The potential of more-than-representational artistic methods lies in their capacity for creative practice as thought-in-action. My ambition for this work is to continue to open up creative practice, to rework and reimagine the contingencies of nature representation. In the photographic field, an important step will be to engage in an inquiry into the technological materials themselves. Instead of assuming neutrality of materials and processes, my work advocates for an understanding of how political and environmental implications are tied up with the tools that we use. Ultimately, photography is not a fixed practice; we should be rethinking it in more liberated and radical ways, as a process of becoming, a congealing of agencies, a reterritorialising of the materials of the Earth (and the environmental and political implications that are carried with that movement), a contestation, a breaking open.

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