PERFORMANCE
PHILOSOPHY

INTRODUCTION: PLANT PERFORMANCE

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Introduction: Titan Arum Performance

On July 5, 2021, an *Amorphophallus titanium,* aka Titan arum or "corpse plant," bloomed at The Huntington Botanical Gardens in San Marino, California. Normally, the occasion of a plant blooming is not cause for a lot of public interest. However, this plant, in this botanical garden, and perhaps especially in this COVID-19 year, was an event. The Youtube timelapse video of the plant's 45-hour flowering recorded over 4500 views, and the "Stankosaurus Rex," as The Huntington named them,[1] also traveled to the California Science Center later in the month to introduce further in-person audiences to the spectacle of their extraordinarily large, and fetid, flowering.

Titan arum boasts the world's largest unbranched inflorescence. They can grow eight feet high and four feet in diameter and weigh up to 170 pounds. As their Latin name suggests, they are extraordinarily phallic in appearance, with an enormous spadix that rises from the centre of the inflorescence and that towers over the rest of the plant during their short blooming period. The spadix (which also bears the male flowers) generates a great deal of heat; the female flowers at their base provide the intoxicating stink that gives rise to the nickname "corpse plant."[2] The heat helps broadcast the smell to waiting pollinators; cleverly (to avoid self-pollination), the male flowers don't bloom until the spadix has cooled down a bit, by which time the plant is full of pollen-carriers. Overall, the flower epitomises the spectacular both because of their huge phallus and because of the fact that their bloom is dramatic, rare, singular, and short: On average, a Titan arum blooms about once every three to seven years, their inflorescence grows very fast in plant terms (six inches

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a day) and, after the fact, their pollination drama is visibly over, the wilted spadix looking very much like an exhausted penis. Of course, the overwhelming smell is also part of the extreme sensorium for in-person audiences, but the online followings of the "Stankosaurus," as well as of their kin in numerous other botanical gardens around the world (e.g., "Uncle Fester" at the Bloedel Conservatory in Vancouver, BC, "Java" at the Chicago Botanic Garden, "Titus" at the Cambridge University Botanic Garden) suggest that even in the absence of the full olfactory experience, Titan arum gives one helluva charismatic plant performance.[3]

We begin the introduction to this special "Plant Performance" issue of *Performance Philosophy* with Titan arum for several reasons.[4] Perhaps most obviously, we want to emphasise that plants *perform*, and that they do so in several important ways. First, Titan arum's spectacular inflorescene is an energetically, chemically, and physically intense event on their own terms. It takes several years for the plant to work up enough steam to create such a massive bloom and, when they do, this work is mostly about a performance of ready fertility to an audience of pollinators: flies, carrion beetles, and sweat bees (although one tantalising story involves elephants). As this example shows, plants *perform* in their own interests, as part of a multispecies network of performativity in which, for example, showiness, smelliness, and eventfulness combine in specific ways to bring about desired ends such as pollination. Thinking about plants as performing in these situations, rather than as simply adapting to their environmental conditions over time, emphasises their agency and responsiveness. If we understand plants as performing—in some of the same ways and for some of the same reasons that human beings perform—then we can begin to understand that plants are active, interactive, and very much tuned into the multispecies relationships in which they participate. For example, some plants only flower and fruit in specific conditions that are much more to do with what is going on around them than with their own internal energies.

Second, plants also *perform* among, and for, people. As Michael Pollan emphasises in his book *The Botany of Desire* (2001), plants call *us* into *their* webs of purpose and interest by performing in ways that are attractive to specific human desires. In his book, these performances involve their affordances of human experiences of beauty (tulips), intoxication (marijuana), sweetness (apples), and control (potatoes), although there are many others (e.g., solidity, reliability, resilience, abundance, shelter, umami). These performances enmesh people in plant agencies, and also demand that we think about performative relationships in more-than-human terms more generally: When plants perform in ways that people find interesting they are able to use *us* as vectors of their own aspirations, sometimes with world-changing results. The spread of wheat, for example, from their origins in Mesopotamia to their near-global distribution, has involved a complex dance between the spreading desires of *Triticum aestivum* (a hybrid human-plant entanglement if ever there was one) and those of people wanting a carbohydrate-rich, high-yield, storable crop (Scott, 2017). If you google "plant performance," you will get a lot of hits involving the "performance" of plants in relation to specific agro-industrial ends (including, for example, "Performance Plants, Inc," a biotech company promoting agricultural and biofuel technologies).[5] Even these heavily-domesticated plants are still performing in ways that are not only and always about instrumental, human desires, but also about the ways in which we might be furthering theirs: It is hardly uncommon for cultivated plants to bust loose and establish themselves, of their own accord, in places other than the ones in which they were planted. Indeed, who knows how Titan arum might benefit from their now-global travels?[6]

Third, of course, plants *perform* specific biopolitical roles. Titan arum's performances are, for example, part of a global web of exotic plant spectacles, and this web is a continuation of a long history of plant involvement in imperialism, colonialism, and commodity capitalism (Sandilands, 2016; Holway, 2013). In their original rainforest habitat in Sumatra, Titan arum is part of a complex ecology that includes people who harvest and cook the corm as an important source of starch (Chicago Botanic Garden, nd-a). They were first brought into the world of imperial plant and knowledge exchange by an Italian botanist, Odoardo Beccari, in 1878; he sent corms to Florence, all of which died, but a few seeds he collected (aka stole) germinated, including one in London's Kew Gardens that became the first Titan arum to bloom in captivity, in 1889. Exotic plants like Titan arum were/are both of scientific interest and a huge status symbol (as at Kew, the two were/are tied together); collectors included royalty, members of the aristocracy and, increasingly throughout the twentieth century, members of the middle class. In botanic gardens and private collections, plants like Titan arum thus *perform* both imperial knowledge and personal prestige. There is now a thriving international trade in Titan arum corms to fuel the exotic plant collection trade, and poaching is a serious threat to their future (not to mention the destruction of their rainforest habitat [Chicago Botanic Garden, nd-b]). Sadly, the plants' spectacular performances are now contributing to their vulnerability in their original habitats.

As a multitalented botanical performer, then, Titan arum offers an interesting introduction to the field of Critical Plant Studies (CPS), in which emerging tradition this special issue on plant performance is located. Of course, CPS is a rapidly growing, highly interdisciplinary field that not only includes multiple branches and shoots (the plant metaphor is hard to resist) but also grows

from varied starting-points and follows divergent clusters of vegetal concern, including philosophical, political, artistic, literary, scientific, historical, economic, intimate, and intersectional dimensions of plant activities in and with different human and more-than-human worlds. It would also be very difficult to draw a clear line around the places where CPS meets and converses with other traditions of plant discussion that do not necessarily identify themselves as within any such named field, including the work of Indigenous plant knowledge-keepers, plant scientists, farmers, gardeners, foresters, botanical writers and illustrators, and activists of many different stripes. Nonetheless, from where we stand as *feminist* plant scholars (meaning we seek to address all oppressions including those of women, Indigenous people, nature and plants), and keeping in mind the original seeds of our intention for this special issue to consider plant performance in artistic, theoretical, ecological, and political contexts (not to mention vegetal ones), we would like to suggest the following four clusters of concern as orienting both our understanding of the field and the place of this special issue within it. We see these four clusters as both preoccupations and provocations: places of interest that have already spurred significant CPS inquiry and that, we hope, will orient its future even more expansively. All these concerns appear in the multiple performative worlds of Titan arum, all are significant to our own work, and all are very much apparent, in different ways, in the brilliant essays that follow.

1. Colonisation and Decolonisation

Plants are not neutral: They are rich in stories of power, identity, change, economics, movement, exploitation, and care, or lack thereof. Plant colonisation refers to the human movement of plants around the world for the purposes of imperialist natural history collecting, value extraction, and nationalist/territorial economic expansion; it also refers to the ways in which plants have accompanied human movement for other reasons. Plant decolonisation refers to methods of questioning the colonial rhetoric of adventure, vanquishment and subjugation of plants and land. It replaces that rhetoric with true stories of damage and violence but also of changing human-plant relations, based on new plant science and better understanding of First Nations knowledge.

The incentives for colonial plant "discovery" (a contested term) and collecting included a striving for knowledge, power, food, medicine, agriculture and national pride (Bousfield 2020). These plant collection practices reached their zenith during colonial global conquests undertaken by major nations such as Britain, France, and Germany during the sixteenth to nineteenth centuries, with key collectors including London-based Sir Hans Sloane and German Alexander Van Humboldt (Schiebinger 2004).

Universal framing of settler colonialism and its practices of plant-collecting as "peaceful and brave" contradicts the violence and damage wrought on the targeted lands and to their original inhabitants (Bacon 2019). Herbaria contributed to this narrative of vegetal achievement, being archival repositories not only of the collected specimens but of the history of who collected plants (and where, how and why). The stories to be found are romanticised tales of brave men overcoming difficult new countries with challenging terrain and troublesome local people (Churchill 2007). With settler colonialism came a changed narrative (Veracini 2007) and changed

human-plant relationship whereby, to paraphrase, power and life become inseparable (Sandilands 2016). Plantation slavery, commonly associated with settler colonialism, was part of the accumulation and liberal progress of colonial expansion, as argued by Donna Haraway and Anna Tsing as the Plantationocene (2015).

Colonial plant pursuits were influenced by Judeo-Christian preoccupations and practices of dominating nature, an idea championed by such individuals as philosopher Francis Bacon 1561–1626, who bemoaned the original eviction of man from the Garden of Eden and believed mastery over nature would ensure safe passage out of the wilderness and back into safe Edenic haven (Merchant 2008). The habit of collecting and propagating plants in individual gardens was added to by the rise of botanic gardens originally intended to stave off famines. The related colonial method of cultivating and trading exotic plants created a market for the movement of plants away from their natural habitats and off on their own journeys around the world. Problems of weeds—again, a contested idea—and invasive species ensued (Webber 2014).

There had already been a purposeful move by colonisers away from close and experiential paganism and Indigenous plant relations well before that, in many instances coinciding with the burgeoning expansion of the Christian church (Gibson 2021). The mistrust of plants paralleled a mistrust of those who applied herbs as medicine or cultural knowledge such as witches, witch doctors or shamans. This shift away from plants and pagan connections with them was exacerbated by racist and chauvinistic perceptions of invasive and introduced plants species during settler colonialism (Bousfield 2020). Colonialism also brought additional issues of erasure of Indigenous plant knowledge and information, along with a subjugation of First Nations people which resulted in a loss of naming and knowledge systems. Professor Jakelin Troy, a Ngarigu woman, has advocated that Australians learn Indigenous "names and knowledge systems for trees and plants that are lost to everyday use" in order to access the deep understandings encoded within them (2021, 1).

We now have a surfeit of plant authors who start their thinking with the biology and morphology of plants, in a similar way to Theophrastus and Darwin in terms of close observations. This is a return to the materiality and ecology of the plants themselves. This biology-focused approach seeks to avoid the legacy of colonisation and its tricky politics. Emmanuelle Coccia, for instance, focuses on the relationships between the leaves of an ecology's trees—as inverted lungs—and on the roots, flowers and networks of lichens, mosses and epiphytes relations (*The Life of Plants,* 2018). Similarly, Eduardo Kohn focused on the multitude of trees in his book *How Forests Think* (2013) in order to take a non-human approach rather than charting the story of plants "for humans" which inevitably lands on oppressions of different kinds. These books are outstanding anthropologies but tend not to acknowledge the damage of colonial epochs which curtails any chances of decolonial healing.

Under colonial regimes, native plants and Indigenous people suffer from careless extraction and exploitation. Botanists historically collected plants in huge quantities for their national collections, frequently by taking advantage of local Indigenous trackers and not remunerating them (Bacon

2019). The trade of rare and endangered plants has largely been conveniently ignored, which Londa Schiebinger refers to in her exploration of the movement of the peacock flower, as a kind of colonial agnotology or willful ignorance (2005). Zaheer Baber notes that the scientific race for botanical knowledge during colonial times of conquest was (and is) critical for the consolidation of plant information. Baber also notes that it was a new age of cultural and intellectual economy, albeit western (2016). In writing about botanical decolonisation, Tomaz Mastnek and colleagues have argued that planting and displanting the land and people became and becomes the same multispecies colonial endeavour. These scholars bring to light the problematics of language around the decolonising of plant: "there is no such thing as neutral terminology" (2014, 364).

Language is an inextricable colonial and decolonial problem for plants. It brings with it the heavy weight of lengthy colonial heritage and its associated forms of mastery. Dan Bousfield writes that "the language of botany, zoology and history is embedded in structures that refer to natives, immigrants, colonists, hybrids and aliens alongside invasion, immigration, competition, conquest, colonisation and pioneering" (2020, 20). Julietta Singh writes of ways to disrupt mastery over land, people, women, animals, and the vegetal world and how to avoid falling back into new forms of linguistic and intellectual violence. Singh's solution is to use language to strip away colonial and neo-colonial masteries, by unlearning and then re-learning (2018). However, she also connects with the paradox of desiring, naming and cultivating suburban gardens. As a daughter of a gardener and as an advocate of the colonial/decolonial garden writings of essayist Jamaica Kincaid, Singh bears witness to the conundrum of needing to garden, and thereby mastering the world of plants, and the need to not garden, as political activism. Singh calls Kincaid's gardening a version of ecological sovereignty and describes it as "absolutely incongruous" (2018, 162).

The incongruity of living in a settler colonial place, practising gardening but understanding the need to change the mastery imbalances of plants and people on unceded lands is not unknown to the authors of this introduction. Kew Gardens' Sharon Willoughby notes, a "discussion of non-mastery, whereby efforts to redress human dominion over trees or European dominion over Australian native plants, needs to avoid committing new kinds of slow violence" (EuropeNow 2021). Willoughby has undertaken some work in Australia with tri-naming—Latin, common and Indigenous names—and has witnessed the reinforced view that renders Indigenous knowledge invisible in Europeans' eyes, or worse subjugated within dominant knowledge regimes.

We are left with a legacy of colonial violence towards plants' habitats, a loss of cultural knowledge and little memory of original uses and significance of plants. We have a rapid movement of invasive weeds between countries which wreaks havoc on local ecologies (Kull 2015). We have a vegetal politics shift that changes human senses of belonging and connection (Head 2014). Decolonising the way we live with plants needs to attend to less separation between human and nature (Plumwood 1986), and it needs to address feelings of loss and grief that abound within plant and human relations (Ojala 2017). Decolonising plants refers to ways in which the institutions, practices and processes of human-plant interactions starts to take into account the wealth of Indigenous knowledge, property (Crabtree 2013), and a reclaiming of the renaming of plants that respects Indigenous culture (Baldy 2015).

2. Botanical Aesthetics and its Vegetal Limits

The dangers of aestheticising nature are evident through the history of art, and these pitfalls extend to human representations of plants. Think of the way a painting of a still life requires its subject's death. The cut flower becomes the object of beauty for the painter to present to the viewer. The original cabinets of curiousity or *wunderkammers* presented objects collected from strange continents and included paintings of rare flowers only seen by brave explorers in far-flung foreign places (Gibson 2010, 129). As if the exoticisation of plants weren't enough, plants have been flattened by artists and/or used as mere background to human action (Gagliano and Gibson 2017).

The vectors of these aesthetic dyads, for example between artist and the cut flower, between the canvas (or alternate medium) and the audience, create structures of experience that can be powerful, even enlightening, but at the cost of the original object. Through art's history of nature painting, the move away from art as religion, towards new forms of aesthetic idealist representations, is evident (Coomaraswamy 1934). Changed aesthetic relations with plants can be seen through the development of nature-as-construct, ranging from seventeenth century Nicolas Poussin's classical formulas of beauty and order, to examples such as Caspar David Friedrich's German Romantic and masculine gaze upon the unconquered world. There is no room, here, to chart an entire aesthetic history of plant representation, only to touch on the memory that plant aesthetics ranges from the minutiae of botanical illustrations to the aggrandisement of the vast landscape scene. Whether painting a garden or wilderness, these processes involved various aesthetic devices such as the Picturesque s-bend, where objects of interest are half-hidden, or the golden ratio where the eye is taken to the most pleasing point, or Romantic framing devices such as the fallen tree or the ancient column… all to give the effect of beauty and truth (Burke 1757).

Aesthetics carries with it the burden of these kinds of morality that have abetted the removal of the natural world to a distant and alien other. Even in Johann von Goethe's 1790 *Metamorphosis of Plants*, which covers the morphology of plant parts, the naturalist begins his book with a poem addressed to his wife (Goethe 2009). This poem was intended as an accessible way to "mansplain" the complex scientific concepts of the book to her—beyond a woman's fragile intellect. It also created a buffer between the science, the art and the natural object itself. Some find Goethe's poetry cloying and its many references to flowers and nature as "woman" uncomfortable, although in keeping with an epoch of Romantic aestheticisation of nature (Kelley 2012). Aesthetics, whether good taste or bad taste, has directly affected our human relations with plants. It has moved humans away from the material power of plants, and to the position of a distant viewer.

Aesthetics is a process of philosophising human relationships with a created object and has been hounded by the separations of those relationships. There are dyads of nature/culture division that are as damaging as the dyad of human/habitat; these cuts have contributed to a deep ontological separation of humans from their plant partners, mistaken as a freedom from nature (Miller 2002). These separations have affected the way we understand the natural world as something that needs to go in a frame on the wall, or on a page in a book. No dirty fingernails. No twigs in your hair.

Human/nature division means that previously powerful human relationships with plants for the benefit of culture have been minimised. Most artists would deny they are aestheticising plants, if/when they include vegetal elements in their work. This was evident in our own Dirt Witches project of 2021 where six collaborators built a city forest, made up of Eastern Suburbs Banksia Scrub, a critically endangered group of plants that grow together on Sydney's eastern seaboard (Dirt Witches 2021). An argument broke out between one of the artists and one of the authors of this paper because the installation, as an urban forest that was contained (or framed) by a rectangle of sandstone blocks, carries an association of diminishing the plants by presenting them as an artwork rather than as independent agents of food, shade and medicine… for the artists' and viewers' pleasure. This formulated and structured principle of framed pleasure is aesthetics at work.

Unfortunately, the moment you frame a plant, or place a plant in a white cube, or perform a plant by connecting sensors and emitting a software screech within an art institution, you are aestheticising those plants, and there is a risk of diminishment. This is an example of the eco-political conundrum of artistic interventions into the plant world. Not to forget that other conundrum: plants as spectacle, such as Jeff Koons 1996 *Puppy*. *Puppy* was a giant pup-shaped floral sculpture situated outside the Museum of Contemporary Art, Sydney and soaring 12.4 metres high. Yes, it was very cute: another characteristic of aesthetic desire (Ngai 2012).

In recent years, CPS has impacted the contemporary art world, not in small part due to the work of writer and curator Giovanni Aloi whose editing of *Antennae* Journal includes and comments on many artists working with plants, their philosophy, intelligence, movement and subjugation (*Antennae* 2020–21). In one of our own books, *The Plant Contract* (2018), by investigating the areas of wastelands, wildlings, human-plant hybrids, bio-rights, ecofeminism, rhizomes and death, a critical plant lens was applied to major artists' works where the division between artist and plant was less of a deep cut. Instead, the artists in *The Plant Contract* were all grappling with an aesthetic way to soften or blur the line between human and nature, between person and plant. The book argued that the aesthetic act—visual and performance art—could mediate difficult post-Edenic relations with plants, could ease viewers into a more humble relationship with the vegetal, and could change our perceptions of plants as "other" and instead return humans to the vegetal world (Gibson 2018).

For CPS aesthetics, the trend of plants as art mediation and curation, greatly evident over the last decade, suggests that artists are positioning plants as the intellectual drivers of critical thinking and art-making, rather than as the inert subject of an artist's creativity. CPS aesthetics, then, is more concerned with performative co-collaboration with plants and for plants. In terms of recent productions of performative plant art, there are too many to mention here.[7] However, a current and highly effective model for developing the collaborative nature of plant and art is the 100s and 1000s performance, a work created for Performance Space, Sydney, by artists Daniel Kok and Luke George. This involved the artists making a performative film, travelling this performative work, and then creating an interactive engagement with large audiences (all plant lovers) through

conversation, mail drops to make artworks that connect to one's plant, and live discussions and poetry sessions (Kok 2021).

Other notable work includes visual art, performance art and design writers who focus on the vegetal such as author of *Gum* and contributor to exhibition texts, Ashley Hay (2020), editor of *Planthunter*, Georgina Reid (2020–21) and the experimental art and writing hub, *Herbaria 3.0*. An influential and influential plant exhibition and catalogue was *Big Botany: Conversations with the Plant* world which was curated by Stephen Goddard and exhibited at the Spencer Museum of Art, University of Kansas (2018). The catalogue, which covered themes of seeds, plant-banks, plant lore, botanophilia and wild plants, included essays by Daniel Chamovitz, the esteemed plant intelligence scholar (2014). Joela Jacobs is a key figure in CPS, known for managing the Literary and Cultural Plant Studies Network and whose own phytopoetics and phytotaxis work informs her work on the biopolitics of gardening (2019). Jacobs' work sits alongside that of Marianna Szczygielska, whose special "Plantarium" issue of the journal *Catalyst* is a response to the intimate relationship between humans and their houseplants and hipster-succulents, with the history of their domestication and the associated consumerism (2019).

The recent efflorescence of plant curation has included an exhibition at Rønnebaeksholm Museum in Næstved, Denmark that attended to the movement of plants and included artists such as Koichi Watanabe and Janet Laurence, with a resultant book, *Moving Plants* (2017), that included theorists Anna Tsing, Natasha Myers and Bruno Latour. This exhibition and book interrogated aesthetics by connecting not with the representation of plants but with a (re)presentation of ecological issues. Another example, *Imperceptibly and Slowly Opening*, included art curatorial documentation by Caroline Picard whose exhibition launched the concept for the wider book, that includes several extracts from philosopher Karen Houle's important work. Houle's writing premise was to describe plants' activities and "styles of thinking" as performing operations (2016, 4).

A deep question emerges from this spate of curatorial, literary and artistic endeavours: how can artists create dynamic plant engagement that does not reduce or minimise or instrumentalise the plant? How can we create aesthetic responses to plant life without killing them or destroying our relations with them? Transgenic plant art is performative in the sense of its duration, endurance and bodily ritual. It is explained in *Signs of Life: Bio Art and Beyond* (Kac 2009) as the merging of human and plant biomatter and can be seen in the Perth artist/curator Oran Catt's ongoing Symbiotica exhibitions. But these puzzling experiments require death to the plant. As plant theorist Jeffrey Nealon says, "death is not what it used to be" (2016, 122).

A leading artist who aestheticises, problematises and decolonises human relations with plants in ways that both confound and problematise plants is Australian Jonathan Jones whose work "Dharramalin" is in the 2021 *Eucalytusdom* exhibition at Sydney's Museum of Applied Arts and Sciences. Jones, a Wiradjuri and Kamilaroi artist, collaborated with Wiradjuri Dr Uncle Stan Grant, to create this work which includes drawings, a wood installation and a thunderous sound component. On the walls hang eight ink drawings that are like ceremonial smoking smudges and are explained as sentinels. In the centre of the room is a wood pile, more like a pyre, made from

mandang (wood) and gum leaves. The wood pyre is bleached and pale and connects to the guardian ancestor Dharramalin who is central to men's business. The soundscape presents as the ancestor voice, a roar of thunder and gum tree aggression. It sounds an angry reminder of the past and it also bellows a plant warning to all, for the future.

3. From Instrumentality to Respect

If one critical, global history of plants and performance concerns their aestheticisation, a second, entwined one concerns their ongoing instrumentalisation and commodification: an issue that is, of course, also very much tied to colonialism. Plants have, at least in Eurowestern history, generally been understood more as bearers of use (for people) than as lives in their own right. As Richard Mabey notes (2015), plants entered into ancient art and literature only once they had become elements in economies of cultivation. They may have been beautiful once they made it into the spotlight, but their primary reason for being there in the first place was because they were *useful*. It is not surprising, then, that the Greek philosophers on whose work CPS histories of plant-thought often rest (see Marder 2014) were mostly thinking about, and with, domesticated and other useful plants; even as Theophrastus was sincerely interested in plants for their own sakes (Hall 2011), the plants on which he mostly focused were there, for study, because they were already, or potentially, part of his sphere of concern for their capacities to be his food and medicine.[8]

Relations of use have thus swirled around plants and human understandings of them for millennia. However, there is a large difference between *use* and *instrumentality*. Where using a plant may involve a respectful and generous understanding of, and relation to, their life and gifts (Kimmerer 2013), a relationship of instrumentality *reduces* the life of the plant to the uses they provide to particular people in a particular time and place: trees become *timber*, grain grasses become *yield*, vegetables become *crop* (Martin Heidegger referred to this process as the creation of "standing reserve"). Further, with the advent of capitalism, these instrumental uses have often been intensified into the status of *commodities*: little pieces of fetishised plant capacity that can be bought and sold for a profit and that become more important, in relations of global exchange, than the actual lives that gave rise to these capacities in the first place, including that of the plants. Tomatoes (*Solanum lycopersicum*), for example, have been *used* by people for millennia and selectively bred and/or hybridised for almost all that history (starting with the Aztecs and other Indigenous Mesoamerican peoples), resulting in thousands of edible varieties with a stunning array of qualities and capacities. Their mass, industrial success, however, rests on a very few traits, e.g., slow ripening, which allows them to be trucked long distances and sit on supermarket shelves without spoiling; the tomato bred, or genetically modified, to display this trait comes to market stripped of almost all other kinds of value and relationship (Barndt 2007).

It is, unfortunately, this latter, instrumental/commodity relationship that has dominated plant-human interactions throughout modern, colonial-capitalist history. European botanists accompanying colonial voyages to other parts of the world were not just looking for interesting or beautiful specimens, they were also looking for plants with capacities that could be bought and sold to make a profit. This extractive relationship continues in more recent practices of

bioprospecting, aka biopiracy (Shiva 2016), that mine both native plants and Indigenous knowledges of them for their potential applications in, for example, the pharmaceutical industry. Further, histories of genocide of Indigenous peoples to create space for white settler agriculture, and of the enslavement of African peoples to participate in plantation economies, are also about the extraction and abstraction of value from particular plants (see Sandilands 2020). Settler-colonial agricultural endeavours in North America, for example—although it is a story that has played out in many parts of the world—dispossessed both Indigenous peoples and the plants and relationships that nourished them, in favor of *crops* that could be transported and marketed on a large scale. Along with generating violent and exploitive labour relationships on a massive scale, most obviously but not only slavery (Tsing 2015), plantations and industrial farms also created monocultures of sugar, cotton, tobacco, wheat, corn, soy—and rice, fruit, tree nuts, oil crops (canola in Canada), pulses, and commercial vegetables—that could not possibly be further removed from Kimmerer's emphasis on respect, gratitude, and reciprocity, even if some of the very same plants might be involved. Ancient temperate rainforests that include thousand-year-old cedars are clearcut and the spindly Douglas-firs planted in their wake become "fibre farms;" most of the corn plants grown in North America are not eaten directly as food, they are used as livestock feed, for biofuel, and as a starch or sugar additive to processed food; millions of acres of forest that have sustained complex ecologies and Indigenous peoples for generations are burned down to make way for one of the world's most useful plant commodities: palm oil.

Scholarship and creative practice in (and beyond) CPS, including the work of several authors in this special issue, has importantly challenged the instrumentalisation and commodification of plants in many ways. First, of course, are Indigenous plant practitioners and educators who, like Kimmerer (2017, 2013), Mary Siisip Geniusz (2015), and many others (e.g., in Turner 2020) are determined not only to restore indigenous plants to the land, but also to re-plant Indigenous values and laws of reciprocity, humility, and respect to people's relationships with plants, even in colonised and industrialised lands. Indigenous and allied artists such as Ayelen Liberona and Natasha Myers (2019) and T'uy't'tanat-Cease Wyss (Rajme 2020) have significantly contributed to this project, not least by developing art/performance practices with plants that are also based on these relationships. Others are also working to think with, and work toward, less instrumental relationships with plants in works of plant-centric theory and philosophy (Hall 2011; Marder 2013), literature (Powers 2018; Roy 2017), literary criticism (Ryan 2018; Adamson 2016), anthropology (Archambault 2016), and many other fields. One recent Belgian show and accompanying book *Plant Fever: Toward a Phyto-centred Design* (2020), curated by Laura Drouet, tackled the issue as one that speaks directly to the heart of artistic practice: in the realm of design, for example, considering "the health and needs of the vegetal realm beside ours [...] can help us identify and rethink damaging practices such as monocultural production processes and the patenting of ancestral knowledge and nature" (15). Another show in Utrecht curated by Laurie Cluitmans (also with an accompanying book), specifically considered gardens as spaces, and gardening as a practice, with which to think and make against relations of utility and exploitation: gardens "bring together thinking, feeling, making, performing" to "teach [...] respect for the soil and for ecosystems with their non-human beings, who are our fellow citizens" (2021, 11). Political performances against commodification are also, of course, involved in activist struggles against industrial logging, monocultural plantation

economies, and the global trade in rare and endangered plants. To use Natasha Myers' term (2021), these and other performances all begin to stage the *Planthroposcene,* an "aspirational episteme" of human-plant mutuality and respect, within the current conditions of the Plantationocene.

4. Phytopolitics and Plant Liveliness

Colonisation, aestheticisation, and commodification all come to bear on the pressing question of which plants, and plant relationships, are allowed or encouraged to live, and which are allowed or forced to die. The question of plant living/dying is enacted, in miniature, in the act of weeding a vegetable bed: Gardens involve biopolitical choices. However, in the current colonial-capitalist milieu, these micropolitical choices are magnified and globalised. Some plants are valued and encouraged to flourish—or forced to live—even amid ecological and social conditions that are unsustainable and exploitive; others wither or are allowed/made to go extinct despite their environmental or cultural importance; and yet others might be flourishing but, because they are deemed "invasive" or otherwise undesirable, are considered entirely killable in the service of economic or ecological understandings of "worthy" liveliness that exclude them. Although people are not entirely in control of these biopolitical relations (e.g., the unwanted spread of insects, bacteria, and fungi sometimes threatens to kill "desirable" plants, and "invasion" usually refers to plants that simply succeed in ways that people do not want them to), questions of plant life and death, and of the relationships in which plant lives and deaths occur, are very much at the centre of this special issue.

One of the places where these questions of life and death are most visible concerns plant endangerment and extinction. Although plants don't usually get as much public attention in public conversation about endangered species as, say, charismatic mammals—Titan arum is a very rare exception—according to one widely-cited study based on the International Union for Conservation of Nature (IUCN) Red List, nearly 20 percent of the world's plant species are threatened with extinction (Brummitt et al. 2015). Although climate change is clearly an important factor, the study singles out habitat loss in tropical rainforests—the places in the world with the greatest botanical diversity—as the greatest cause of global plant endangerment, and also singles out conversion of the land to agriculture (both plant and animal) as the greatest cause of this habitat loss (it can be seen from space, as can forest clearcutting in other parts of the world). The relationship couldn't be clearer: some plants, especially the ones that are considered top commodities, are made to live in the places where others are made to die.

Further, the plants that are made to live in former rainforest lands, including both oil palms and soy, may be plentiful in number, but it might be harder to describe them as thriving. Of course, we are treading on difficult, potentially anthropomorphic ground, here—perhaps oil palm as a species are "thriving" simply because their range has expanded into Malaysian rainforests to which they would never have travelled without slash-and-burn deforestation—but there is clear evidence that, at the very least, large, monocultural plantations are risky places to be a plant. Although burning down the rainforest produces a layer of nutrient-rich matter that can sustain a plantation for a

couple of years, the thin and often acidic soil underneath it requires the large-scale input of chemical fertiliser for the longer term. Further, densely-planted monocultures—not just in former rainforests—are highly susceptible to pests, diseases, and adverse weather; they are also, especially when they require anthropogenic inputs (fertiliser and water), almost entirely dependent on the aspirations of their human keepers, who are, in turn, almost entirely dependent on the plant-product's price on the global market, not to mention local political and environmental conditions.

Even the life-status of an individual species, or individual plant, can change depending on their economic value. For example, where the bark of cork oak (*Quercus suber*) was once widely used for wine corks and other materials, to the point that conservationists worried about their future, it is the *decline* in cork use caused by the advent of plastic and other cheaper alternatives that is, ironically, contributing most strongly to their endangerment. With a dramatic fall in the market for the bark, there is less institutional incentive to care for the trees and their Mediterranean and North African habitats.[9] Almond trees in California are suffering an even worse fate. Because they are particularly thirsty, recent severe droughts and water regulations in the region have forced farmers to bulldoze healthy, mature trees and either leave the land to lie fallow (which may not be a bad thing in itself), replant with other species, or put in younger almonds that do not require as much water.

Finally, plant biopolitics are very obviously at work in the constellation of issues surrounding so-called invasive species (which are often, but not always, also "exotic," meaning from somewhere else). There is not space even to scratch the surface of the many debates involved in CPS discussions of this topic (Sandilands 2022). Invasive species eradication is a multibillion dollar industry for companies like Bayer;[10] weeding out space-taking plants by hand can also be an attentive practice of care in a vulnerable ecosystem. Indigenous plant advocates have a range of opinions about both native plant (and relationship) endangerment (Kimmerer 2013) and problematic, colonial discourses around invasive species management (Reo and Ogden 2018). Some species are considered invasive because they are an agricultural nuisance; common milkweed, *Asclepias syriaca*, was once such a "pest" even as they are now a cherished pollinator plant for monarch butterflies. Others, like edible garlic mustard (*Alliaria petiolata*), achieve the designation because their spreading behaviour in the landscape has outpaced their usefulness. However, the one thing that is important to say in this context is that the appellation "invasive" almost immediately renders a plant *killable,* at least in Eurowestern plant conversations: they become a not-quite-life—perhaps *bare life* (Agamben 1998)—that needs to be sacrificed for a greater socio-ecological good. (The designation "weed" performs similar work, but perhaps without such clear overtones of crisis.) Although this bio/phyto/necropolitical movement is clearly related to use and commodity value, what counts as an "invasive" plant at a given moment, and in a given place, is a wider and more complex issue, having to do as much with which plants and relationships are currently valued as with the plants' own capacities and behaviours (Mabey 2010).

Within these economised and politicised relations of plant life and death, CPS literatures and artworks that explore plant *liveliness*—e.g., sentience, intelligence, communication—come to

matter a great deal. As we are now beginning to understand from this important research, plants see and hear, taste and smell, process information and respond, communicate and act, remember and adapt in real time (e.g., Chamovitz 2012; Gagliano 2018; Mancuso and Viola 2015; Simard 2021; Trewavas 2003). Although recognition of an organism's liveliness in this way does not prevent their instrumentalisation and commodification (think about rats, who are bought and sold for scientific research at least partly *because of* their ability to respond and learn), this research—and the many other works in CPS that start from and extend it in rich and important ways into philosophy, literature, and art (e.g., Vieira 2015)—represents a turning-point in Eurowestern thinking about plants.[11] If plants are conceived as fully alive, aware, and participating actively in the multispecies worlds they share with people (or not), then it becomes even more important to consider the ways in which *their* agencies and desires are involved in our relations with them. Further, plant liveliness also unfolds in ways that are not fully intelligible in a mammalian register, and recognition of collective or distributed intelligence, complex plant temporalities, and even vegetal perspectives on the relationship between life and death, can and should cause us to think more carefully about what is happening when we think about performative and other relationships with plants.

In This Issue

On the one hand, then, this issue of *Performance Philosophy* highlights the many ways in which plants are active subjects who, in complex and intriguing ways, enact change in the world in specifically vegetal—or species or even individual plant—performative registers. On the other hand, it also foregrounds the *politico-aesthetic* conditions in which these performances cannot help but occur. Within and across these multiagential, bio/phytopolitical relations, these essays consider how specific artists' and others' performances in, with, and for plants intervene to create conditions for a more contextual, critical, reflexive, nuanced, and/or urgent understanding of plant-human relationships, both historically and in the current moment. We are, then, delighted to include the following nine essays.

Ashley Howard's "Lettuce Entertain You: Floral Agency in Ralph Knevet's *Rhodon and Iris*" analyses Ralph Knevet's 1631 play within the context of ancient Greek allegories, historical theatre critique, playwriting and critical plant studies discourse. It celebrates florally-named allegorical characters, whom Howard interprets as performing and embodying the qualities of plants. Howard critiques the staging of a form of floral agency. The vegetal characters also use plants as ingredients in cosmetics, poisons, and antidotes, which Howard interprets as an assertion of affective agency. Here, Howard's work ties into the current issue's inquiry into the aestheticisation of plants and the ways plant liveliness works within and transforms it. Floral agency collaborates with literary narratives when beings perform *for* plants, *as* plants, and *with* plants, says Howard. She inquires into how theatre, affected by vegetal life, in turn affects the vegetal world; in particular, she takes Marder's concept of affective power to investigate "performing with plants" as extending to both performing actors on the stage and to potions to be imbibed. She explores two directions of affect and mutual influence between humans and plants and proposes that when the floral characters

use plants as vegetable ingredients in their plots, these two experiences can be experienced simultaneously.

In Camille Roulière's essay "Herbaceous Traces: A History of Agri/Cultural Sinuosities," the author experiences yam daisies and native millet grasses using a theoretical framework indebted to Édouard Glissant's concept of *trace*, which she uses to explore her own clay moulds and plaster reliefs. As both artist and performative writer, Roulière defines herbaceous traces as voices of plants that leave absences. As such, she attends to the work of decolonising daisies and millet grasses, while also performing a walking aesthetic. She analyses the legacy of colonial and post-colonial farming as an agricultural process that tugs away the traces of pre-colonial connections with the land. Her first-person narration witnesses her struggles to re-connect paper and clay works with the earth; she interrogates agricultural praxes such as fire stick farming while making her bas reliefs. Colonisation of language interrupts earthly work, just as grazing cattle erode soil and flatten native grasses. This essay is a working-through of the risks of performing the grasses and daisies as an aesthetic and biopolitical act.

In Lesley Instone and Rhett D'Costa's essay "Becoming Entangled: Queer Attachments with Hemiparasites," the reader is transported to Dja Dja Wurrung country, where the authors focus on emergent nature/culture artforms and personal relationships to plants in postcolonial, recuperating lands. They ask how, as artists informed by Latour, they learned to be affected by plants as a generative interaction, while also referring to the decolonial demands of engaging with plants. They disrupt the division between parasite and host; by turning to Haraway's queer worlding they inquire into how the local plants drew them into their queer relations. The artists' meeting with a local hemiparasite, the *snotty gobble* or *Dodder-laurel* (and their smothering and forceful habits) via the art project *Becoming Differently,* triggered a tracing of how plant parasites came to be an important theme, an affective enticement and a collaborative quality in their art. They meet a dodder, after initial feelings of mild fear about parasitic beings. The essay considers overlaps among hospitality, hostility and host in dodder laurel relations, and notes that "the performative quality of 'queer' is useful also in understanding human-nature interactions as embodied articulations."

In her essay "Plant Art from the Amazon: Tree Performance in the Work of Frans Krajcberg," Patrícia Vieira discusses artist Frans Krajcberg's burnt tree sculptures. Through a reading of Karen Barad's intra-action and human-nonhuman co-production, and through scientific evidence of plant behaviour, Vieira argues that trees are entwined with activism. This concern connects with the issue's performative curiosity about the instrumentalisation (and extinction) of trees; it also charts the context of the Amazon from which the trees came, and the Indigenous knowledge of that region, to advocate for the artwork as a work of environmental activism that involves the material agency of the plants themselves. In keeping with the issue's grappling with liveliness and biopolitics, Krajcberg's dead trees are articulate; they can be organised to do political work either symbolically or materially (or both); and they are agential even when they fall, rot or burn.

Chantelle Mitchell and Jaxon Waterhouse's essay "Pine-ing for a Voice: Vegetal Agencies, New Materialism and State Control through the Wollemi Pine" considers the politicisation and weaponisation of plants in a colonial and imperial context, emphasising the performative power of plant agency. They draw on varied discussions of New Materialism and plant intelligence to consider the prehistoric and significant tree, the Wollemi Pine. The Wollemi survived Australia's colonial genocide and ecocide, narrowly, and their performed act of survival is almost legendary; ironically, they are now an element in nationalist rhetorics of "Australian-ness." Yet how does this legendary survival/endangerment story speak to agency and how does it slip into new forms of biopolitics? Where Michael Marder warns of the limits of imposing language on the vegetal, these authors recognise more-than-human forces of co-constitutive relations to interrogate the colonial history of language and the biopolitics (biopower) of the plants.

In Sarah Blissett's essay "Algae Sympoiesis in Performance: Rendering-with Nonhuman Ecologies," the author uses her own performance practice and Haraway's concepts of sympoiesis and multi-species kinship as a framing device for plant discourse and performance, or what she calls *rendering*. Her algae renderings are connected to Derrida's *pharmakon*: cooking as rendering; encounters with algae rendering as art; rendering with algae via dance performances; and algae sympoiesis. Discussions of other performative plant artists provide a benchmark for how art/photography/performance can work alongside algal forms, rather than with dominion over them; these more collaborative and respectful practices work as a template for the author's own algal rendering. The complexities of creating artworks that do not subjugate plants sits well with the themes of this issue. Blissett says she has proposed "an embodied ecodramaturgy that connects ecological ways in which algae are performative of changing ecologies with the mediums of movement and painting as principles of 'rendering-with algae.'"

Chris Bell's essay "Collaborating With(in) the Garden: Stewardship, Performance, and Thinking Beyond the Spatio-temporal Formations of Institutional Legacies" considers his work with the Native American Medicine Garden (NAMG) on the campus of the University of Minnesota, USA. Finding alternatives to the commodification and instrumentalisation of plants sits at the heart of this essay: for Bell, stewardship is a central principle in a critical, multispecies practice that attends, respectfully, to Indigenous teachings against the industrial agriculture—and "land-grab" history—that surrounds and situates the garden. The garden's caretaker Cânté Sütá Francis Bettelyoun (Oglala Lakota) worked at the NAMG from 2007 to 2020 and taught students and colleagues how to engage with erasures of plants and relations caused by colonial white settlement, and with the silences that inhabit the legacy of Land-Grant/Land-Grab institutes. Bell draws on his rich Dakota and Lakota intellectual traditions to address relations to the land, and argues that the version of stewardship so carefully performed in the garden contests the spatio-temporal boundaries of the University. In particular, he relies on Cânté Sütá's teachings on milkweed to consider the multispecies webs of mutuality and meaning in which the plant is located: milkweed is both an element in, and a metaphor for, more respectful plant relations.

In "Ash Stories: A Spell Against Forgetting" Madeleine Collie analyses *The Ash Project*, which she co-curated in Kent UK, along the Pilgrim's Way. The curated project, which included the work of major

plant artists Heather Ackroyd and Dan Harvey, had over sixty walking programs, involved the planting of over 1000 trees to replace the diseased ash, and included curating a memorial and exhibitions. Collie engages with the complexities of colonialism and plant movement across the world, and also considers the capitalist entanglements that emerged during recovery plans for ash dieback disease. The essay describes the walking and talking connected to the Ash Project, as a curatorial strategy or process, which is an innovation in curatorial methodology, one that is finding purchase beyond the limits of the world of art. It also charts the author's move back to Australia, where the ash trees she finds on her return are a reminder of accelerated global travel of vegetal diseases. It is also an effort to locate the story of the ash tree's decline in terms of genetic potentials for the future.

Finally, Thomas Pausz's essay—or, rather, theory-fiction—"Making New Land: An Intertidal Aesthetics," involves a future story focused on astro-botanical explorations of intertidal Icelandic locations and places further afield. Pausz's narrator interprets the findings of a Sea for Space expedition to Mars to study an intertidal plant, Salicornia, which gathers other biotic matter or detritus to create firmer soil. The narrator's job was to investigate the Sea for Space divers who disappeared, except for Frustula, a poet who survived to tell the tale. Her version of events is that the Sea for Space divers had started to merge with space coral hybrids in a joyfully multiple way. Pausz's intertidal aesthetic presents the dunes to us as objects of mystery and reminders of far-flung places like the Mars of our imaginations and other sci-fi productions. The character of Frustula connects the past with the future, the real with the imagined. This cli-fi fictional account of co-survival, threat of extinction and pioneer failures connect with this issue's speculations about the legacy of colonisation for plants, biopolitics and future human-plant relationships, and serves as a fitting, speculative conclusion for the overall conversation.

For the Future

The trajectories of research, creative practice, and activism begun (and continued) by the contributors to this volume are ongoing, and we look forward with anticipation to their future research and creation. However, we are also aware that there are voices missing from, or at least not as central as they might be in, this issue. As neither Indigenous people nor people of colour, we are aware of the call to step aside and listen to those who know these stories. This act is part of decolonising ourselves, so that we can work toward decolonising plants and relationships. It is also part of developing a more genuinely global and multiply-situated network of critical plant knowledges, relations, and practices, one that is as sensitive, for example, to racialised and racist histories of plant relationships as it is, for example, to the gendered relationships on which we have often focused our own work in the field.

Cutcha Risling Baldy notes a problem with decolonising language that allows white settler colonialism a chance to become innocent again, and thus to repeat colonial perpetrations (2015); this idea is echoed in Eve Tuck and Wayne Yang's understanding of "settler moves to innocence (2020). One risk in CPS is that a focus on restoring dignity and pride of place to indigenous plants will detract attention from Indigenous *peoples'* demands for territory and sovereignty. We hope we have been clear that we believe meaningful decolonisation must include both, together, but we

would also like to emphasise that perhaps CPS as a whole needs to step back and develop a better ability to hear and follow the voices of Indigenous plant knowers, practitioners, and activists. For example, Indigenous scholar John Waight writes about his childhood garden life in Darwin, where exotics and scavenged plants were naturalised; he theorises that Australia has moved through a full Edenic narrative circle and that now is the time to return to decolonise the garden: not to create a new, untouched "Eden" but rather to be a miniature ecology that fits into wider ecological circles. Waight draws on the writing of Caribbean artist and gardener Ernesto Pujol. Both Waight and Pujol watched colonists pull out native, endemic and naturalised plants and replace them with lawn. Both are also extremely suspicious of settler re-wilding projects that dishonour the original occupants' idea of wildness (Pujol 2021), and of the line that divides "good" from "bad" plants in the name of indigeneity (see also Reo and Ogden 2018).

Further, it is imperative to think about plants and plant performances as inextricably bound up in *racialised* histories of slavery and other forms of forced labour, imperialism, extractivism, property relations, and other racist institutions. Katherine Yusuff's (2019) argument about the essential connection between extractive global industries and slavery can easily be expanded to include plants, especially given the non-coincidental relationship between the labour of enslaved peoples and the labour-intensiveness of sugar and other monocultural plantations. Plants, however, accompanied and sustained enslaved peoples in other ways (Carney 2001); they have also played important roles in the politics of apartheid in South Africa (Foster 2017); and they have been, and continue to be, actors in both racist violences and resistant relations in many parts of the world (e.g., MIFTAH 2012). The works of POC plant scholars, activists and artists such as Lauren Craig (2014), Christopher Griffin (Sprayregen 2020), and Ron Finley (Weston 2020) should thus, we think, be as central to the unfolding work of CPS and plant performance studies as the ones that are the most prevalent interlocutors in the conversation so far.

Given that the field of plant performance studies highlights the multivalent performative capacities of plants, it is our collective responsibility to make sure their diverse collaborators are just as well recognised. There is work to do.

Notes

We would like to thank the editors of Performance Philosophy for their enthusiasm and support for this special issue, especially Will Daddario and Theron Schmidt, and Will again for his excellent copyediting.

[1] In this introduction we refer to plants as "they/them" even in the singular because of their ontological multiplicity and often-complex sex and gender presentations, and also because, following Robin Kimmerer (2017), we would like to get away from the objectifying "it" that removes plants from the realm of sensuous personhood.

[2] One of the primary chemical compounds involved in their putrid smell is dimethyl trisulfide, which is a product of bacterial decomposition, including the decomposition of humans, so the plant's nickname is accurate.

[3] A list of live-feed and time-lapse videos from around the world is available on the plant's Wikipedia site.

[4] Throughout this introduction, when we use the pronoun "we," we mean ourselves, Prue and Cate. We do not speak on behalf of the contributors.

[5] See http://www.performanceplants.com/

[6] Titan arum seedlings and corms are available for sale to private growers. One shudders to think about it.

[7] The authors have compiled a spreadsheet of many artists currently and recently working with plants, including the 50+ performance artists and theorists who submitted abstracts for this journal. However, there are too many to mention in this introduction. We also apologise to any other CPS scholars or practitioners who do not see their work recognised here. The field is now so large we cannot hope to cover it all.

[8] His ten-volume *Historia Plantarum* is considered one of the world's first herbals, a genre of plant writing devoted to understanding plants' medicinal uses to people.

[9] The tree is still heavily protected in Portugal, where it is a legal offense to cut one down unless it is diseased. See APCOR, nd.

[10] Bayer purchased Monsanto in 2018 despite thousands of lawsuits against the latter in multiple countries (including both Canada and Australia). Many of these lawsuits involve Roundup, the glyphosate herbicide most commonly used in invasive species eradication.

[11] Of course, many Indigenous and other traditions recognise and respect the fact that plants are lives in their own right and have desires that are not reducible to people's desires for them.

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Biographies

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PERFORMANCE
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LETTUCE ENTERTAIN YOU: FLORAL AGENCY IN RALPH KNEVET'S *RHODON AND IRIS*

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On 3 May 1631, the Norwich Society of Florists held a feast to celebrate their flowers and the art of floriculture. It was a day of firsts: the society was newly founded and presented what is currently the earliest known florists' feast recorded in the city (Duthie 1982, 18). Among its entertainments, the feast included Ralph Knevet's *Rhodon and Iris*, a quirky floral play written and performed for the occasion. The play was Knevet's first and only known venture into writing for the stage. With his green pen—in the many senses of the phrase—Knevet invites a theory of floral agency where plants are co-artists, capable of affecting and being affected by the world.

Rhodon and Iris presents two entwining plots, the first of which depicts the characters' misadventures in love. Rhodon loses interest in his courtship with Eglantine and falls in love with Iris. Intense jealousy ensues as Eglantine seeks to regain her lover's affection; she disguises herself as Iris and gives Rhodon a love potion under the pretence that the powerful philter will bring him strength. Another narrative follows a dispute between Violetta and the tyrannical Martagon, who unjustly tramples her gardens. Violetta asks her brother Rhodon for help. Failing to resolve the dispute through conversation, Rhodon and his friends (Acanthus and Anthophotus) declare war against Martagon and his supporters (his friend Cynosbatus, the witch Poneria, and the latter's accomplice Agnostus). Rhodon drinks the love potion before the battle, but the concoction proves poisonous—a fact Eglantine did not know when she acquired the potion from Poneria. Only the precious lettuce, a gift from Violetta, saves Rhodon and renews his strength. He meets Martagon

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in a battlefield of armed flowers, where the fight ends just moments before their weapons strike. The goddess Flora descends and restores peace among the flowers: Rhodon and Iris become engaged, Martagon must repair the damage caused by his tyranny, Eglantine must atone for her abuse of love, and Poneria and Agnostus are banished.

The play has received little critical attention apart from a semi-diplomatic transcription in Amy Charles's 1966 *The Shorter Poems of Ralph Knevet*, and scholarship tends to focus on the play's pastoralism (Smith 1897; Laidler 1905; Greg 1959; Yang 2011). Beyond its generic use of the pastoral, however, *Rhodon and Iris* presents a complex philosophy of plant performativity and floral agency. Specifically, floral agency energizes the narratives that plants and humans co-author on the early modern stage, the primary setting for grappling with my questions in this essay. How and to what extent do plants author themselves? Is this authorship a form of vegetable agency? How does theatre offer special attention to the performativity of plants in art and nature? My approach to these questions combines two prevalent yet sometimes opposing threads within critical plant studies—Michael Marder's plant agency and Mel Y. Chen's and Jeffrey Jerome Cohen's material agencies—and queries the tensions between these theories.

In an interview with Prudence Gibson, Marder describes plant agency in terms of the performativity of plants; the affective exchange between plants and their environments is an exchange upon which their being depends (Gibson 2018, 29).[1] Crucially, Marder specifies that "plants are the artists of themselves: they create themselves and their environments all the time: losing parts and acquiring new ones, changing the landscape and the airscape, moulding themselves and their world through forms inseparable from vegetal matter" (Gibson 2018, 29). Marder expands here on his earlier work in *Plant-Thinking* (2013) and outlines a philosophy that holds special utility for reading early modern texts. In *Radical Botany*, Natania Meeker and Antónia Szabari observe Marder's tendency to locate plant-thinking and plant-like thoughts in art and philosophy—a tendency that manifests despite his wariness of imposing human meaning onto plants (2020, 22). Meeker and Szabari also identify art and philosophy as "early modern technologies of animating plants" (2020, 24), emphasizing a sympathy between the plant agency of Marder and of early modern writers.[2] Marder shares key assumptions with historicist texts that make his work particularly useful when examining early modern plant agency, which in turn reflects new light back onto his own plant philosophies.

Theatrical representations of plants may seem too anthropocentric given that human actors embody the flowers, but the play relies just as much on linguistic and vegetable affects as on human actors. Language collaborates with nature, as Jeffrey Jerome Cohen finds in his study of minerals and stone agency: "Narrative has power over human reality: it can mediate. But that compositional power is contingent rather than absolute, deriving in part from the thing described. Language is inhuman, exerting its own resistance, slide, and material force" (2015, 33). What this analysis means for *Rhodon and Iris* is that (a) the performed play and printed playbook exert linguistic agency upon human and non-human audiences, and (b) floral narratives (such as those written in playbooks and herbals) rely on floral agency, from which they gain compositional power. In other words, narratives about plants are co-authored by the very plants after which they derive.

Theatre is a useful mediating tool given that vegetable affect becomes more recognizable when presented on the early modern stage or in a playbook—in microcosms of the world.

This essay examines performances *for*, *as*, and *with* plants—three interconnected modes of performativity that demonstrate floral agency in *Rhodon and Iris*. Responding to Marder's emphasis on affective exchanges, I begin by exploring how agency manifests when plants are affected by their environments, focusing on the affective consequences of performances that are staged *for* plants. The florists' feast builds upon a history of floral celebrations that have had material consequences for the vegetable world, such as the Roman *ludi Florales* which was first held to revitalize withered plants. The otherness of plants, as Marder presents it, also invites different modes of performativity: do plants exert agency by inspiring and witnessing theatrical performances? Flowers inspire a kind of self-reflexive art that features floral characters who then act with flowers; within this somewhat disorienting interplay, flowers become the artists of themselves.

In the second section, I consider how plants affect their environments—the complementary side of Marder's philosophy—through an analysis of human characters who perform *as* plants. The play deploys florally-named allegorical characters who perform and embody the virtues of flowers, imagining and staging a form of floral agency as the plants move consciously and freely about the stage. This section invokes Marder's artistic plants and Cohen's linguistic agency as it examines how three floral characters embody the virtues described in early modern herbals. The play thus presents floral agency through the mediating agency of language, with particular attention to the language of plays and herbals. *Rhodon and Iris* is far from being a solely human production; it is artwork co-produced with plant, human, and material agencies. To reiterate the point, I query Marder's plant otherness by considering the allegorical others of the play—two characters who represent Ignorance and Envy and who lack agency due to their status as non-floral characters.

The third section combines both aspects of Marder's performative plants in its examination of performing *with* plants. The floral characters use plants as ingredients in cosmetics, poisons, and antidotes to affect other floral characters, so that plants simultaneously affect and are affected by floral agency. These ingredients exert the vegetable affect that Chen theorizes in *Animacies*, particularly in relation to the transformative capacities of food. In an oft-quoted passage, Chen also articulates a theory of affective exchange between plants and their environments: "it is possible to conceive of something like the 'affect' of a vegetable, wherein both the vegetable's receptivity to other affects and its ability to affect outside itself, as well as its own animating principle, its capacity to animate itself, become viable considerations" (2012, 4). I build upon the work of Marder, Chen, and Cohen to show how floral characters and floral ingredients become actors whose performances demonstrate floral agency. By examining performances *for*, *as*, and *with* plants in *Rhodon and Iris*, this essay outlines and queries the roles that plants can assume as the artists of themselves.

Performing *for* Plants

Performances staged *for* the vegetable world exhibit one half of Marder's plant performativity, wherein the being of a plant is conceived in part by its ability to be affected by its environment. Just as plants affect their environments by inspiring theatrical performances, these theatrical performances in turn affect the vegetable world. This section outlines a brief history of Roman and English entertainments that celebrated flowers and explores how these festivals facilitated affective exchanges between the floral and non-floral worlds.

Performances for plants reach at least to the Roman *ludi Florales*, a festival for the goddess of flowers that was held annually beginning in 173 BCE. The festival included performances, circus games, and a sacrifice to Flora (Scullard 1981, 110). Much like the Festival of Dionysus at Athens, the *ludi Florales* included among its entertainments *ludi scaenici*, or theatrical performances. These performances took many forms from early musical entertainments to later Latin adaptations of Greek comedies and tragedies, as well as mimes that were "associated with the sexually charged atmosphere of the *ludi Florales*" (Dunkle 2014, 385). *Ludi scaenici* were often performed on wooden structures erected near the appropriate temple for the occasion; between Flora's temples on the Quirinal Hill and the Circus Maximus, the performances were likely held in the Circus (Wiseman 2015, 89).

Importantly, the festival sought to propagate vegetable life. As Ovid explains in the *Fasti* ([1 century CE] 1931, 5.183–378), Flora fell into a deep despair that led her plants to wither from neglect. Attempting to save the crops and flowers, the Roman senate pledged to celebrate Flora with annual games if she returned to her plants. Flora accepted the exchange (5.327–330). Whether these performances enhanced plant growth, they certainly held material implications for the vegetal world. Given that the temporary stages of the *ludi scaenici* were made of wood, even the physical infrastructure of the performances can be understood as a collection of vegetable actors who exert artistic agency. Vin Nardizzi takes up a similar idea in relation to the early modern stage when he considers how the stage post (a tree prop) represents at once a post, a tree, and even an actor's body. When an actor invites the audience to perceive the wood as post and tree simultaneously, "He revivifies the wood of theatre, suggesting that in these moments there is no distinction between 'nature' (living wood) and 'culture' (lumbered wood)" (Nardizzi 2013, 22). Collapsing distinctions between art and nature also appear in *Rhodon and Iris*, as explored below.

The Roman *ludi Florales* took place from 28 April to 3 May, the final day correlating to the Norwich florists' feast on 3 May 1631. As a festival for fertility, the *ludi Florales* implied lewd connotations in the seventeenth century—so much so that the Norwich florists felt compelled to deny any connection to the ancient celebration. Knevet defends the play against potential criticism when he comically denounces "Bacchanalian riot" (1631, sig. ar) in his dedicatory letter to the Society of Florists. William Strode takes a similar stance in his poem "A Prologe crownd with Flowres. On the Florists Feast at Norwich" (c.1632–1635), which calls Flora a harlot and states that "Our feast we call / Only with Flowres, from Flora not at all" (quoted in Duthie 1982, 20). Whether early modern poets really saw danger in celebrating Flora, whose status as a courtesan is ambiguous even in Ovid, their

need to address her controversial role suggests that the affective agency of flowers persists across centuries of stage performances for plants.

Early modern florists did not sell cut flowers in shops as a modern audience might expect. Rather, they were cultivators trained in the art of floriculture who, as Brent Elliott notes, were interested in growing new varieties of plants. They grew these variations largely by propagating cuttings from naturally occurring sports, or the parts of a plant with morphological anomalies (2001, 171). By propagating these variations, florists encouraged a wider range of plant performativity as human and vegetable co-produced new iterations of a given plant. The emerging forms of plant performativity flourished in part due to festivities such as the florists' feast, which could accelerate an exchange of floral knowledge among attendees. One might expect that a play written and performed for florists would celebrate human manipulation of and domination over nature, but *Rhodon and Iris* celebrates the vitality of plants within a collaborative human-vegetal ecology.

Celebrations of English floriculture continued into the eighteenth and nineteenth centuries as flower shows gained popularity. The Horticultural Society of London was founded in 1804 and its rival, the Metropolitan Society of Florists and Amateurs, was founded by George Glenny in 1832. As Elliott writes, the latter "was perhaps the most prominent of a number of organisations that tried to extend the traditional range of florists' flowers" (172). The former was renamed the Royal Horticultural Society in 1861 and still holds flower shows today. Several scholars have explored these early histories of flower shows in greater detail (Duthie 1982; Elliott 2001; Ziegler 2007; Willes 2014a). Joseph Breck's *The Young Florist* (1833), a text that contains dialogues that aim to persuade readers to become flower cultivators, offers a nineteenth-century perspective on floristry. Other forms of flower shows have also emerged in recent years, including the Netflix series *The Big Flower Fight* (2020), which depicts florists, sculptors, and garden designers competing to create floral sculptures to display at the famous Kew Gardens in London.

Performing *as* Plants

On the other side of Marder's performative plants is the vegetable's capacity to affect its environment. In the literary context of *Rhodon and Iris*, plants demonstrate affective agency when human actors perform allegorically *as* plants. Although the characters in *Rhodon and Iris* are primarily shepherds and shepherdesses, their virtues map onto the early modern plants after which they are named. The rose is strong of heart, the lily poisonous, the iris clarifying. Homer Smith offers an early attempt to explicate the allegorical relationships between the characters and their floral counterparts: "Martagon, the Red Lily, is haughty and overbearing; Violetta, timid and easily oppressed. The servant appropriately receives the name of the dependent and clinging Eglantine. The fair physician is called Panace (All-heal); Acanthus (the Thistle) and Cynosbatus (the Bramble) are both defiant and headstrong warriors" (1897, 437). These qualities are somewhat misleading and anachronistic, however, and the reading includes minor errors. For instance, the servant is Clematis rather than Eglantine, and Violetta is hardly timid when she petitions Rhodon for his assistance.

These floral allegories are better served through a reading grounded in early modern herbals and herbaria. This section investigates the performativity of three floral characters (Rhodon, Martagon, and Iris) as they relate to accounts of these flowers in early modern herbals such as John Gerard's popular 1597 *Herball, or Generall Historie of Plantes*. By contrasting these characters against non-floral characters (Poneria and Agnostus) who are eventually banished from the pastoral world, the essay pinpoints floral agency as the prevailing affective force of the play. Floral agency is made visible to a human audience through the virtues associated with each plant. Jessica Rosenberg articulates the role of virtue in representing a collaboration between plants and literature: "'vertue' acts as a specific term of art, prescribing the use of a figure and its characteristic property. It names a force inherent in a specimen or figure, what we might think of as an innate vigor or potential energy waiting to be put into operation by a skilled artisan. Whether in distilled plant material or in figured language, vertue blurs the line between art and nature, between human craft and the nonhuman material it manipulates" (2016, 61). The plant philosophy in *Rhodon and Iris* expands this reading to suggest that art is not an exclusively human craft: virtuous plants can act without humans because they themselves are the artisans. The floral characters combine art and nature and demonstrate their inherent virtues even without human interference. The non-floral allegorical characters lack such herbal virtues and thus lack agency in the play.

Rhodon takes his name from ῥόδον, an Ancient Greek word for rose. Gerard's *Herball* states that the rose deserves "the chiefest and most principall place among all flowers," praiseworthy for "his beautie, vertues, and his flagrant [fragrant] and odoriferous smell" (1597, 1077). Gerard outlines the qualities of several roses, many of which relate to the vitality of the heart: "The distilled water of Roses is good for the strengthening of the hart, and refreshing of the spirits" (1082). The red rose is especially apt to "strengthen the hart, and helpe the trembling and beating thereof" (1082). Rhodon's heart is strong in the realm of love, as evident in his familial love for Violetta, romantic love for Iris, and friendship with Acanthus. But his heart is also strong in its courage to confront injustice and for its measured control over the passions. Rhodon's performance of the rose demonstrates affective agency when he influences the actions of other flowers. For example, when Acanthus tells Martagon he will not surrender, the former finds courage in his proximity to Rhodon's own courageous heart: "Nay, be assured, proud man, not any smart / Can cure the courage of a valiant heart" (2.4.5).[3] Much like the distilled rose waters described in Gerard, Rhodon's performativity as the rose yields affective changes in his environment.

Martagon, a tyrant who tramples Violetta's gardens and whom Rhodon must confront in battle, performs the qualities of the lily. While Gerard records several lilies, the martagon being a variation with a strongly reflexed perianth segment, the *Herball* does not list their associated virtues. Smith suggests that Martagon is the "Red Lily" because he is "haughty and overbearing" (1897, 437), but the toxicity of lilies is more relevant. Other early modern texts reference the plant's association with poison, as in Ben Jonson's *The Sad Shepherd* when the sage Alken lists martagon among the "venom'd Plants" (1641, 151) a witch uses to enact her wiles. Martagon's association in this scene with mandrakes, hemlock, nightshade, and adder's tongue (all plants that are poisonous to humans) spotlights its toxicity. In Knevet's play, Martagon conspires with Poneria to poison Rhodon—a plot that complements Poneria's scheme to also disrupt the feast of the Norwich

Society of Florists (see her speech at 1.1.6). As a noxious actor, Martagon spreads the affective agency of lilies to the other flowers and audience alike.

Iris invokes multiple meanings when she performs the clarifying virtues described in early modern herbals. Gerard refers to the iris as the flower-de-luce (in Latin, *Iris vulgaris*) and associates the plant with cleansing properties: a preparation made from lupins and the root of flower-de-luce can "cleanseth away the freckels and morphew" (1597, 94)—both of which refer to discoloration of the skin.[4] According to Nicholas Culpeper's *The English Physitian*, another popular herbal that combines descriptions of plant virtues with readings of the stars and planets, the iris also offers "a Remedy against the bitings and stingings of Venemous Creatures being boyled in Water and Vineger and drunk" (1652, sig. R2). The character Iris exemplifies the clarifying properties of irises through her unblemished love for Rhodon, which contrasts Eglantine's deceitful love. Although Iris is accused of poisoning Rhodon under the cover of night, she becomes an astringent when cleared of the false accusation. When Rhodon learns of her innocence, he states that "my Iris is as clear as innocency itself" (5.4.7). Iris (the character) allegorically performs the floral properties of irises (the plant) in order to clarify Rhodon's ocular iris (a metonym for his vision). Iris embodies clarity in her human-vegetal body, and her floral agency outwardly affects other flowers. To take the human-plant interplay one step further, this agency then influences the audience who experiences floral affect as spectators of the stage performance and, even now, as readers of the printed playbook.

Expanding Madhavi Menon's suggestion in *Wanton Words* (2004) that allegories require both light and dark (the illuminating purpose of the allegory and its antithesis), Corey McEleney observes that allegory relies on disfigurement and otherness to convey meaning. As far as allegory "attempts to convey a meaning by indirect means, it necessarily relies on a form of otherness, inherent in the very word 'allegory' (from the Greek *allos*, or 'other')" (2018, 69). Although plants are often considered others, an idea that empowers plants in Marder's *Plant-Thinking*, the allegorical others of *Rhodon and Iris* are two non-floral characters.[5] The contrast between floral and non-floral produces in part the uniquely vegetal agency of the play.

Agnostus and Poneria are the only non-floral characters, allegorizing Ignorance and Envy. These allegories frame vice as a violation of the pastoral world and hearken to prelapsarian Eden. The name Agnostus derives from the Ancient Greek ἄγνωστος, or unknown. A famous example of the adjective appears in Acts of the Apostles 17:23, during Paul's speech to the Gerousia in Athens. Paul mocks the pagans for having an unknown god (Ἄγνωστος Θεός) rather than his ubiquitous Christian god. Knevet's audience may have recognized the passage from the 1611 King James Bible: "For as I passed by, and beheld your devotions, I found an altar with this inscription, 'To the unknown god.' Whom therefore ye ignorantly worship, him declare I unto you."[6] Akin to the god whose identity is indecipherable, Agnostus's character appears eroded and indistinct. Deemed "an Impostor" (1631, sig. a4r) in the dramatis personae, Agnostus shifts from one persona to another. He is a poorly disguised scholar one moment, a colonel the next. By depicting the non-floral allegories as unstable and unconvincing, Knevet suggests that the floral characters are agential not because of costumes or names, but because they embody the affects—the virtues—of each plant.

Poneria derives from the Ancient Greek πονηρία—a reference to vice or wickedness that Knevet interprets as envy in a dedicatory letter to the Society of Florists. Poneria attempts to undermine the vegetal world through a literal contrast between light and dark, desiring a return to the shades of night and its promise of chaos. Referring to the Norwich florists' feast itself, she tells Agnostus that the pair needs to "be prepared to act some stratagem / To eclipse the glory of these festivals" (2.1.1). While some plants such as moonflowers and four o'clocks bloom at night, the idea is that Poneria hopes to extinguish the source of vegetable life: the sun. Her envy threatens the vegetal world, but this world ultimately reasserts authority. Although Rhodon advises moderation and mercy throughout the play, he refuses Poneria's plea for clemency (5.6.4) and keeps her in custody until the goddess Flora banishes the two "intruders" (5.6.17). Vin Nardizzi has noted that Gerard describes the harmful virtues of several plants, such as the "danger" of mad apples (1597, 274) and the "hurts" caused by leeks (138).[7] Unlike these harmful virtues, the vices that Poneria and Agnostus allegorize are not floral in nature and thus prove impotent; their status as non-floral allegories may explain why these vices are easily remedied and supplanted by virtuous flowers.

These allegories place *Rhodon and Iris* in conversation with early modern herbals that outlined floral virtues in literary contexts. These allegories also propose a link between the printed playbook and another herbal book: the herbarium. Leah Knight's *Of Books and Botany in Early Modern England* explores the interchange between early modern herbals and poetry (2009, 103), and at several points considers the vegetable-book hybridity of the early modern herbarium. Unlike herbals, herbaria contained within their pages dried plant specimens, and were aptly called dried gardens or winter gardens (Knight 2009, 31). Knight observes that herbaria preserved plants which could then return to a lifelike appearance when soaked in water. This process mirrors the life-giving act of reading verse aloud: "This aspect of the herbarium is especially suggestive when considered in light of the literary metaphor of the garden of verse: like flowers in the herbarium, poems rendered two-dimensional by being placed on the printed page could be resurrected to a metaphorically three-dimensional form when projected into space by being read aloud" (32).

Rhodon and Iris puts this idea into action in the realm of drama. Resembling the herbarium, the printed playbook preserves two-dimensional flower specimens which are then revived through theatrical performance. What is at stake in identifying a similarity between the playbook and herbarium? An answer lies in Knight's assertion: "Herbaria are thus notable for their unusual ability to narrow the gap between a representation and the thing represented, and they could therefore be said to problematize the broader gap between those overarching categories, art and nature" (32). In both the playbook and herbarium, flowers are simultaneously author and subject, art and nature. The playbook can then facilitate a staged performance of plants as three-dimensional beings where the allegories spotlight (not merely humanize) vegetable affect.

Performing *with* Plants

The two modes of affecting and being affected by one's environment come together when the floral characters use plants as vegetable ingredients in their plots. Plant-based cosmetics trick the eye, love potions beguile the heart, and antidotes clarify the senses. Such botanical potions are

common in early modern plays: a love potion is extracted from a flower wounded by Cupid in Shakespeare's *A Midsummer Night's Dream*, and *Macbeth* depicts a poison of hemlock and yew. What sets *Rhodon and Iris* apart is the compounded agency of plants (or at least characters who are more plant-like than human) performing *with* plants.

Cosmetics mediate the appearances and senses of characters with help from the vegetable world. Eglantine is particularly skilled in the art of preparing and applying cosmetics, and as an unrequited and jealous lover of Rhodon uses these skills to compensate for her shortcomings in love. Her servant Clematis enumerates, at great length, the many beauty products Eglantine uses. These substances include products that can be ingested or applied topically, either to alter one's disposition or physical appearance. Plant-based cosmetics exhibit an agency that is comparable to that of vegetable foods. Drawing from Jane Bennett's argument that food is an actant, Mel Y. Chen argues that one can know the affect of a plant by eating it: "when humans and nonhuman animals eat them, they have specific effects and can be either nourishing or toxic to bodily systems" (2012, 41).

The principles of Chen's argument apply here as plant-based products mediate the body externally and internally. Eglantine improves her complexion with distilled water from "flowers of oranges, woodbine, or roses" (3.1.3), and extracts skincare products from the rinds (another form of skin) and juices of plants:

> Some made of daffodils, some of lees,
> Of scarwolfe some, and some of rinds of trees,
> With centaury, sour grapes, and tarragon,
> She maketh many a strange lotion.
> Her skin she can both supple and refine
> With juice of lemons and with turpentine. (3.1.3)

Used externally, these products alter Eglantine's visual appearance to elicit a desired response in the beholder, thus bearing affective consequences on Eglantine's environment. Used internally, the topical applications are absorbed into the skin and infuse the floral character with new vegetal properties. The cosmetics further affect Eglantine as she becomes a hybrid performance of eglantines and of the many other plants she absorbs.

The extracted aromas of plants can also alter the body and its disposition. For instance, Eglantine infuses herself with nourishing properties when she burns storax and spikenard in her room (3.1.3). The first is a fragrant tree resin that can soothe the throat, and the second is an essential plant oil used to soothe the mind. Eglantine also prepares perfume to entice her beloved:

> The virtue of jasmine and three-leaved grass,
> She doth imprison in a brittle glass,
> With civet, musk, and odors far more rare,
> These liquors sweet incorporated are. (3.1.3)

Notably, Eglantine captures the "virtue" of jasmine, signalling both its scent and agency. One might perceive Eglantine's cosmetology as an exertion of human agency over the vegetable world, but her status as a florally-named allegorical character suggests that the plants collaborate to perform new floral affects. Furthermore, these properties are intrinsic to the plants themselves—not to Eglantine's knowledge and ability to harness them in little jars.

Plant ingredients exert further affective changes when ingested, as when Eglantine administers a love potion to her beloved Rhodon. Unbeknownst to Eglantine, the philter contains "vipers' blood mixed with the juice of aconite" (4.2.13). Gerard describes the virtues of aconite, more popularly known as wolfsbane: "The force of these Woolfes banes, are most pernicious and poisonsome," capable of killing a man or beast within half an hour without remedy (1597, 818). Its name likely derives from the Ancient Greek ἀκόνιτος, which refers to something invincible. The potion reflects the poisonous qualities of Eglantine's jealous and insincere love, parodying the oft-quoted phrase from Virgil's *Eclogues*: "*omnia vincit Amor*" ["Love conquers all"] ([c.37 BCE] 1916, 10.69). Eglantine's love unintentionally conquers the beloved with the invincible agency of aconite.

The duality of plants as both poisons and remedies signals the ambivalence of vegetable affect, an agency that is far from subservient to human desires. Such duality appears in Shakespeare's *Romeo and Juliet*, for instance, when Friar Laurence describes how one plant's virtues become harmful when misapplied:

> Within the infant rind of this weak flower
> Poison hath residence, and medicine power,
> For this, being smelt, with that part cheers each part;
> Being tasted, slays all senses with the heart. ([1599] 2008, 2.2.23–26)

Similarly, in *A Midsummer Night's Dream*, the effects of Cupid's love flower dissipate only when Puck crushes an herb over the eyes of Lysander ([1600] 2017, 3.3.37–38). Gerard lists the medicinal qualities associated with each plant, and such knowledge expanded as readers, including Elizabeth Freke and Margaret Boscawen, added their own commentaries to herbal writings (Leong 2014). Margaret Willes explores the medicinal qualities of plants and the use and growth of plants for "physick" (2014b), joining other scholars who have begun to explore the many herbal remedies in literary texts (Pollard 2005; Kerwin 2005). In other words, the early modern stage has long been interested in the curative and catastrophic artistry of plants.

The antidote to Eglantine's love potion is none other than humble lettuce, likely wild lettuce in this case, which is a gift from Violetta. According to Gerard, lettuce is a mild sedative that can induce sleep and "cooleth a hot stomacke, called the hart burning" (1597, 241). Panace calls lettuce the "noblest herb that e'er in garden grew" (4.4.1), and Violetta claims this "precious herb" can thwart the "devilish force / Of strongest poisons or enchantments" (4.1.6). That lettuce should soothe Rhodon's enflamed heart, poisoned as it was by the burning passions that motivated Eglantine, confirms its affective abilities. Lettuce confers its soothing qualities in an expanding network of healing affects—a network that resembles the venation pattern on its leaves. All at once, Rhodon recovers, Martagon's tyranny ends, Eglantine's passions are cooled, and peace returns to Thessaly.

In addition to the lettuce from his sister, Rhodon receives a gem from Iris. Clematis observes that the gifts communicate the virtues of their givers: "These noble gifts, beseeming well / Both the receiver's and the givers' qualities / I will deliver to the honored swain" (4.4.1).

The play seems to work toward a theory of plants that engages the doctrine of signatures, wherein plants resemble the body parts for which they have curative powers, but the play resists the tendency to place vegetables in a subordinate role. Sixteenth-century writers such as Paracelsus described this doctrine in anthropocentric terms, arguing that God designed the plants in a way that made evident their usefulness for humans (Foucault [1966] 1989, 29). In *The Order of Things*, Michel Foucault emphasizes how certain vegetal and non-vegetal bodies are drawn to one another with a shared affinity: "And what other sign is there that two things are linked to one another unless it is that they have a mutual attraction for each other, as do the sun and the sunflower" (31–32).

Reimagining this plant philosophy, *Rhodon and Iris* deploys the doctrine of signatures in a way that decenters the human. One example lies in the treatment of aconite, a plant that Foucault describes as an instance of signatures: "There exists a sympathy between aconite and our eyes. This unexpected affinity would remain in obscurity if there were not some signature on the plant, some mark, some word, as it were, telling us that it is good for diseases of the eye. This sign is easily legible in its seeds: they are tiny dark globes set in white skinlike coverings whose appearance is much like that of eyelids covering an eye" (30–31). Although aconite might heal ocular afflictions, *Rhodon and Iris* emphasizes its otherness, deploying aconite to instead deceive and betray the eye. Poneria tells Eglantine that the love potion will make Rhodon forget ever seeing Iris: "Iris then shall be forgotten clean / As one whom he had ne'er scarce known or seen" (3.2.21). Aconite can also deceive the eye into perceiving false resemblances, as when Rhodon is convinced beyond doubt that the imitation of Iris (Eglantine in disguise) is in fact Iris. The consequence of this misattribution is that Rhodon and his fellow shepherds doubt the virtue of the real Iris. Aconite may resemble the human eye in physical form, but the plant has the capacity to both distort and clarify vision. Such ambivalence underlies its independence from the human world.

Conclusion: Agential Po(e)sies

Far from serving human interests, the flowers in *Rhodon and Iris* assert their agency by challenging and collaborating with other vegetable and material agencies. Knevet's plants participate in an affective exchange with their environments, engaging Marder's and Chen's theories of vegetable affect. The stage performance and printed playbook historicize these theories in an early modern context, where art and philosophy are also understood as important "technologies of animating plants" (Meeker and Szabari 2020, 24). I have aimed to explore performances *for*, *as*, and *with* plants in *Rhodon and Iris* to articulate the many roles that flowers play as they exert floral agency. In performances *for* plants, actor and observer participate in one such affective exchange. The plant, as a witness to and motivation for the performance, exhibits agency that affects the play; in turn, the play affects plants and the other agencies that interact with them. Language also collaborates with the floral subjects to produce theatrical art—a line of thinking that builds upon Cohen's

linguistic agency. The narrative agency of the play, written in celebration of flowers, holds material consequences for the vegetable world.

Language also collaborates with plants when characters perform *as* plants, embodying the virtues described in early modern herbals. Figurative devices such as allegory and metaphor help Knevet reproduce and represent the performativity of plants on stage; crucially, these performances are co-authored by the flowers themselves. Knevet's use of theatre to articulate this philosophy challenges divisions between art and nature and among literature, philosophy, and science. When the floral characters then perform *with* plants, they combine the role of the human actor with the role of the vegetable ingredient and literary text. Chen's analysis of food helpfully considers how ingesting plants can transfer the vegetable's affective virtues onto the consumer. Perhaps paradoxically, the florists' feast is more invested in celebrating the agency that flowers enact upon their cultivators (rather than vice versa). These virtues are inherent to the plants; neither the florists nor Knevet are responsible for bestowing agency upon the flowers. Although the feast centered around florists and thus may seem to celebrate human dominion over nature, the plants perform a uniquely floral agency.

Knevet's flowers begin to answer the question that began this essay: how and to what extent do plants author themselves? In *Rhodon and Iris*, plants collaborate with language, humans, and other plants whose agencies intermingle over the course of the narrative. Marder's engagement with plants as artists invites a fresh reading of *Rhodon and Iris* that welcomes other modes of performativity. Theatre accommodates these layers of performativity in ways that make it an ideal site to explore the affective exchanges between plants and non-plants. Moreover, with its wooden stages and vegetable props, the theatre itself begins to dismantle any distinction between art and nature. Literary texts such as *Rhodon and Iris* become interactive galleries, spaces to explore the artistry of plants—but always with the knowledge that flowers are by no means limited to human understandings of art.

Notes

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[1] As Marder states, "the performativity of plants is their mode of being in the world—their affecting and being affected by the places of their growth" (Gibson 2018, 29).

[2] Meeker and Szabari also note that "early modern libertine botanists often rely on literary or textual figures rather than on the visual images that are regularly deployed in botanical works" (2020, 18).

[3] All modernized quotations from *Rhodon and Iris* are excerpted from my forthcoming edition of the play for *Digital Renaissance Editions* (https://dre.uvic.ca/emdRho_edition.html). Amy Charles prepared a semi-diplomatic transcription of the play which was published in *The Shorter Poems of Ralph Knevet* (1966), but the edition does not include collations or transcription and editorial principles, and its emendations are inconsistent. The 1631 playbook was printed with two variant title pages: STC 15036 and 15036a. My edition takes as its copytext the

London state preserved at the Boston Public Library; it uses standard American spelling and modernized punctuation to conform to modern grammatical use. The parenthetical citations reflect the anthology's use of act/scene/speech numbers as opposed to act/scene/line numbers.

[4] The OED (2002) defines morphew as "any of various skin diseases characterized by localized or generalized discoloration of the skin".

[5] Marder celebrates this otherness: "Whenever human beings encounter plants, two or more worlds (and temporalities) intersect: to accept this axiom is already to let plants maintain their otherness, respecting the uniqueness of their existence" (2013, 8).

[6] Many thanks to Gregory Rowe for noting this biblical comparison and alleviating my own ἄγνοια.

[7] I thank Vin Nardizzi for sharing his research on harmful plants and early modern virtue.

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Biography

Ashley Howard is a PhD student in the Department of English at the University of British Columbia. She is currently researching fish and waterscapes on the early modern stage, with a focus on drama by amateur playwrights. More broadly, her work explores ecotheory, editorial praxis, and TEI encoding. Using this combination of approaches, she aims to make more non-canonical plays accessible to a wider audience of readers and theatre practitioners. Ashley was an editorial consultant and encoder for *Linked Early Modern Drama Online* from 2017 to 2020. She is currently editing Ralph Knevet's 1631 play *Rhodon and Iris* for *Digital Renaissance Editions*.

PERFORMANCE
PHILOSOPHY

HERBACEOUS TRACES
A HISTORY OF AGRI/CULTURAL SINUOSITIES

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> Our landscape is its own monument: the meaning of its trace only unveils on the underside. It is all history.[1]
>
> Édouard Glissant (1981, 21)

In this piece, I follow the geo-temporal meanderings of native grasses (in particular yam daisy-*Microseris lanceolate* and native millet-*Panicum decompositum*) through the Australian colonial record and beyond to reveal co-constitutive entanglements which bear witness to a plurality of agri/cultural narratives.

In particular, I draw on the concept of trace as theorised by philosophers Jacques Derrida and Édouard Glissant to explore and produce aesthetic interventions which reveal, shape, coerce and/or support these grasses' presence and agency—their voices. These interventions (or human-created records) range from the words of Bruce Pascoe (2014) and Thomas Mitchell (1839) through to Jonathan Jones' exhibition (2019) and my own experience/practice as I research, write and engage with native grasses by making a herbarium and imprinting the collected grasses to produce negative clay moulds and plaster bas-reliefs which capture their material, physical sinuosities and suggest alternative assemblages and affordances of voice and void.

Scattered through geo-temporalities and media, these interventions document—trace—native grasses' historical experiences and the role(s) awarded to them. Their punctual nature

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accounts/allows for ruptures, disruptions and (dis)continuities: each intervention carries its own rhythms of the collision between past and future in its midst. This fragmentary state also supports the fluid positioning of voices—the crafting of a textual space where poetics become a tool of decoloniality.[2] Such a juxtaposition of perspectives and representational practices aim to generate intertwining accounts of vegetal being-in-the-world. More precisely, it aims to provide new insights into how native grasses have shaped and been shaped by colonial and decolonial practices—to illuminate their sinuous trajectories with(in) the fabric of the land and provide new perspectives on what constitute agri/cultural practices in Australia.

Philosopher Paul Ricœur explains that "if we want to be guided by the trace, we need to be capable of this withdrawal, of this abnegation, which means that our own concerns fade before the trace of the other" (1985, 182). Creating bas-reliefs requires a physical, material engagement with grasses. I collect, I dry, I arrange and rearrange, I make moulds, I pour plaster, and finally, once it has cured, I reveal (herbaceous traces have appeared and disappeared). There is no space for my own concerns in this process. Herbaceous traces "weave [...], in the shadow of a labyrinth covered with mirrors, a tenuous but indispensable guiding thread" (Derrida 2006, 236 n.7). Their vitality directs me and shapes each creative sequence as they imprint their own rhythms upon paper, clay and plaster—upon malleable surfaces.

Through these successive imprints, I endlessly perform and reperform my engagement with grasses. In particular, my textual power of agency recedes in the face of herbaceous traces. They inflect the text's rhetorical fabric—they dictate its textures: I "only ever follow traces with the *finger of the words*" (Glissant 1969, 245, original emphasis). Herbaceous traces' spontaneous impulses propose the placement of words and paragraphs on the page. Like seeds dispersed by winds, like roots spreading far and wide underground, these placements follow unpredictable patterns. Elements interplay with their routes. They respond to humidity, rain and theory; to rock, soil type and word limit. Movements are encouraged or hindered. Seemingly unrelated elements are brought together (encounters happen). Feeble and friable ecomimetic representations metonymically link traces and words. Similarly to Glissant, "I abuse blissful parentheses: (this is how I breathe)" (50). My breath connects me with my environment. Each breath I take revives the traces of the seeds I sent floating in the wind. I imagine them as they germinate in the earth—under the argument and in the curing plaster. We breathe together. This redoubles meanings, reflecting the deeply transformative relationships of vegetal and human worlds—of trace and text (both literary and visual). By teasing a symbiosis between traces and words/artworks, I thus engage in proliferating, redundant processes of meaning-making which are reciprocal and never final. How could they be? Herbaceous traces are indissociable from the notion of fragments—they embody the fragmentary nature of a colonial/colonialised environment: they circle without giving; suggest without revealing. They opacify.[3] By preserving gaps, fractures (silences) in the text, I attempt to signify the ubiquitous presence of herbaceous traces—to weave it within my piece's very fabric—making this presence non-dissociable, at any given point, from the discussion. Such a design partially answers the ethical challenge of "(re)presenting the stories of others" (Ballengee-Morris et al. 2010, 60), and feminist scholar Patti Lather's query: "how can writing the other not be an act of continuing colonisation?" (2007, 13).

In following and mimicking the converging and diverging lines of herbaceous traces, I think of Derrida who writes:

> to speak of it [the trace] but also to understand that it can, itself, speak and speak of itself, leave traces or legacies beyond the living present of its life, ask (itself) questions regarding its own subject, in short, also address itself to the other. (2006, 235–236 n.7)

Herbaceous traces are not passive: they are participative entities in the process of creating and recording history. However ventriloquially, their voices shine in the text. While remaining subjugated to (contingent upon) my voice, their voices' presence nonetheless denotes an attempt to question (at the very least) and shift (however partially) the usual anthropocentricity of the academic position (Rose 2009). It also bears witness to the fact that vegetal voices can no longer be ignored: worldwide, environmental crises are forcing us to hear these voices, forcing us to realise that our environments *have* voices. Philosopher Michel Serres writes:

> The mute world, the voiceless things once placed as *décor* surrounding the usual spectacles, all those things that never interested anyone, from now on thrust themselves brutally and without warning into our schemes and manoeuvres. (2003, 3)

Writing (inscribing) herbaceous voices on page, clay and plaster provides a textual space where native grasses, which do not easily accept colonial reduction and domination, reply. I have chosen to follow Serres' turn of phrase—I insert them "brutally and without warning" within my work. Such interjections account for (translate) vegetal resistance and defiance of my attempts at discursive control. I design these voices by pressing dried grasses into clay, and by compiling (environmental, historical) data and my own subjective, speculative perceptions. The diversity of representational practices reflects herbaceous traces' ability to shift and mutate; to travel and return. By manipulating and repurposing loaded modes of representations to display herbaceous voices on page and in plaster, I also transcribe movements, and particularly native grasses' ongoing trespassing of colonial boundaries, their bubbling in interstices, and their constant push back within the colonial rule, within containment. Their voices rub against mine. I believe that this emplaced plurality of voices is necessary for speech—whether oral or written—to exist. As Derrida writes: "[s]orry, but more than one, it is always necessary to be more than one in order to speak, several voices are necessary for that [...]" (1995, 35). Alone, one voice cannot speak; it cannot say anything. Different voices speak in this piece so that it can come to life.

As I write these words, I am reminded of social justice scholars Jarrett Martineau and Eric Ritskes who explain:

> the task of decolonial artists, scholars and activists is not simply to offer amendments or edits to the current world, but to display the mutual sacrifice and

> relationality needed to sabotage colonial systems of thought and power for the purpose of liberatory alternatives. (2014, 2)

This text responds to their injunction: to produce "liberatory alternatives," it attempts to implement change, and not simply document it. My textual *mises en scène* are designed to move across and within emplaced bodies to reconfigure relationships: to reimagine alterity so that alternative ethical positions on environmental crises can emerge.

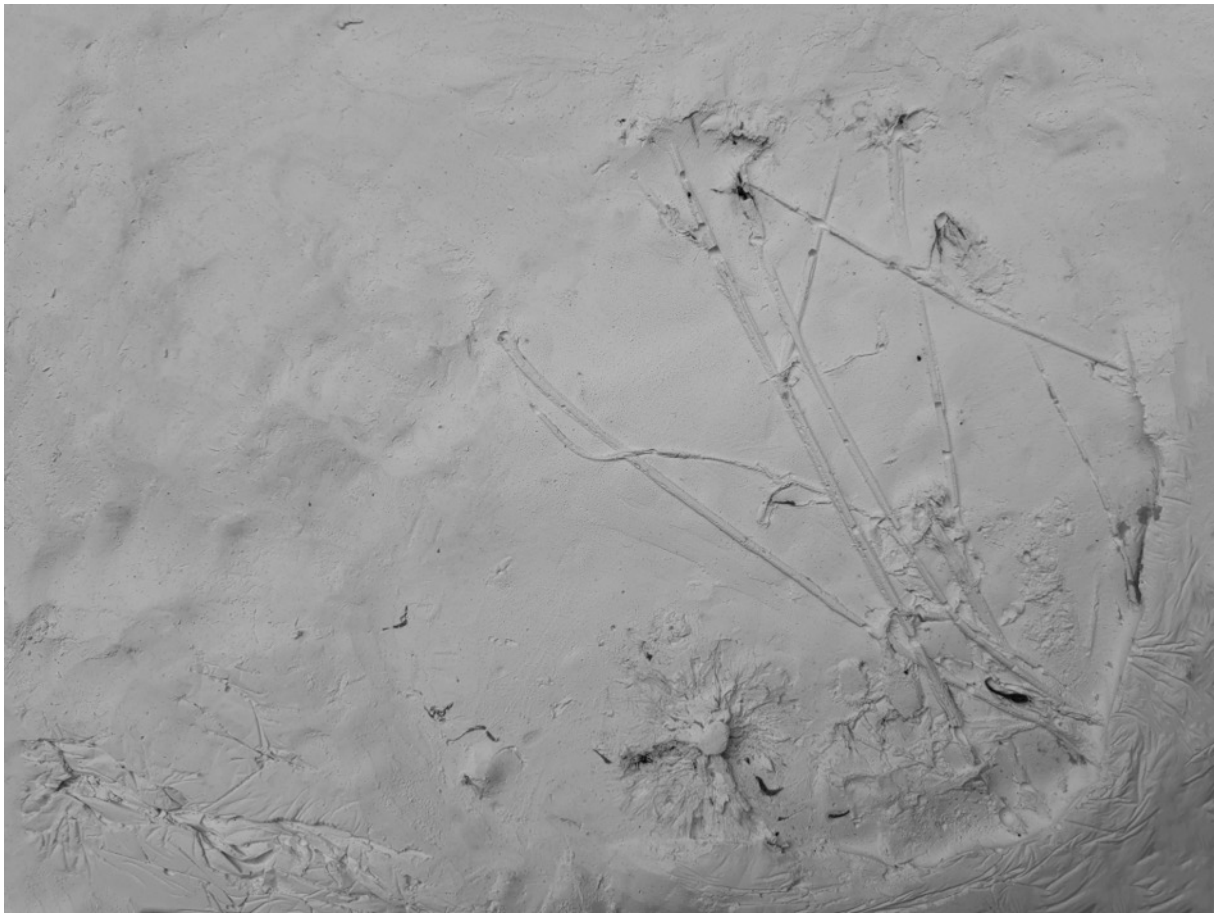

Plate 1 — Dandelion Folly (we reap what we sow)

I "discovered" the complexity of the Indigenous agricultural system when reading writer Bruce Pascoe's *Dark Emu* (2014). The shock came not so much from learning about the vegetal and human worlds' co-constitutive and co-dependent economies but from realising that, for years, I had been reading most of the texts Pascoe uses as sources—the journals and diaries of explorers and early colonists—and utterly missed their significance.

Yam daisies (*Microseris lanceolata*) are tuberous grasses with toothed leaves and tufted yellow flowers. Like dandelions, the florets composing the flower eventually give way to pappi which aid seed dispersal (Atlas of Living Australia 2020*;* Australian National Botanic Gardens 2016). The first sighting of yam daisies recorded in the *Atlas of Living Australia* occurred on 4th January 1770 near

Wagga Wagga (collector: NSWOBS-05078). Yam daisies grow all over south-eastern Australia, including in lutruwita/Tasmania. Their roots are edible and described as a staple food for Aboriginal peoples by explorers and early colonists (Pascoe 2014, 22–25). Records from the period, like the plants themselves at the time, abound: "[t]he soil of these plains looked rich, the grass was good, and herds of cattle browsing at a distance, added pastoral beauty, to that which had been recently a desert" (Mitchell 1839).

I had failed to grasp the meanings and implications of the vegetal traces recorded within the journals and diaries of explorers and early colonists. Like their writers, I had filtered information and disregarded evidence to craft my own narrative. Theirs is a narrative of beginning: the beginning of possession through surveying—they read the land and think they see the glory of their destiny in its textures. Mine speaks about the beginning of the end—I read the premises of environmental destruction in their words and, as a colonial heir, I (unavoidably) mourn the disrupted fabric of the land (Derrida 2006, 67–91, 121). While seemingly different, these narratives actually perform the same task: they subdue and use vegetal traces to establish a chronology and find causal links. Once more, once again, rhetoric overwrites the physical world, quickly, logically. It obscures and flattens vegetal traces. It denies complexity, entanglements, inheritance, and as such, responsibilities. Such attempted erasures lead to iterative trauma.

Everywhere I go, I collect grasses. I attempt to gather traces whose materiality can somehow follow me home. I also recover traces of vegetal being-in-the-world in explorer and surveyor Thomas Mitchell's journal. These traces deconstruct narratives of beginning and end. They rebuke the appeal of "the myth of pure lineage"—of the primordial trace—which supposedly legitimates claims (Glissant 1989, 141). Instead, they generate spiralling narratives; tales which bite their tails; tales which, rather than disjunctions, highlight the multiple (and opaque) pre-contact economies and post-contact continuities of the vegetal world.

Vegetal textures run deep. Human selection and manipulation favour plants rewarding their carers with the best and most reliable yields—and maybe the most pleasant tastes. The large and juicy roots of yam daisies are described as "nutty," "grassy" (Verass 2018), "sweet with a flavour of coconut [… or] more like a radish than a potato" (Cribb & Cribb 1975, 151)—it depends on the sources (and the palates). Sophisticated tilling and burning methods aerate and fertilise the soil, allowing for optimum seed germination and root penetration (Pascoe 2014, 25–26). Harvest methods protect the tuber: only a portion of it can be collected; care has to be taken so that its spared portion does not bruise. Penalties apply to humans failing yam daisies (109). Oblique associations with nonhuman entities (such as encouraged through companionship planting) assist humans in ensuring the survival and prosperity of the vegetal world. Every five years, once seeds have been dispersed, once tubers are dormant, then it is time to burn the yam districts (119–120). Slowly, progressively, human tools, structures and techniques shape plants' ecologies: habits and genomes evolve, develop, change and become finely intertwined with domestication and agriculture (35–37). Templates of production take shape. These agricultural practices (re)shape the fabric of the land. Harvests increase. Consequently, so do human populations. Reciprocity and co-

dependence ensue. Native grasses, and yam daisies in particular, become companion species. Humans and plants rely on each other. They grow together. They share the land.

Early colonial texts, sketches, paintings and herbaria record the extent of the connections between plants and humans in pre-colonial Australia. These objects are not anodyne. Recording invites (re)arranging. These texts, sketches, paintings and herbaria coerce and incorporate what they depict into a European mythopoetic framework. As I press grasses between pages so that they dry, I am aware that herbaria play a particularly important role in that process, for "[p]art of controlling the substance of one's future would lie in controlling its nomenclature" (Glissant 1997, xiv). Classification tables unfold sculpturally on pages. Lineages are born and drawn out of similarities in shapes and thin air. The story and genealogy of yam daisies is reduced to a string of Latin words plastered on paper like a flattened strand of DNA.

kingdom Plantae

phylum Charophyta

class Equisetopsida

subclass Magnoliidae

superorder Asteranae

order Asterales

family Asteraceae

genus Microseris

species *Microseris lanceolata*

Through this single (but not simple) act of classification, the ontology of yam daisies is duly documented and then promptly erased. Reality is deconstructed as the physicality of their connections with other entities switches location. Traces on land are replaced with traces on paper; descriptive literature covers the coloured grain of the soil. Words are traced over worlds. And ultimately, ecologies become inhospitable. *Microseris lanceolata* lies helpless on the page. Disconnected. Alone. Silent.

Yet, this native grass is rich in names and voices: *Microseris lanceolata* is one of them. Aboriginal Nations who have custodianships of the well-drained, moist soil prefer to call it differently. It is pannin in some Tasmanian languages ("The Murnong Story" 2019); it is murrnong in eastern Kulin (Clark 2014); it is ngampa in the Thura-Yura languages (Simpson and Hercus 2004). It depends on where bodies stand. Names encapsulate emplaced relationships: they bear witness to networks of connectivities. When Europeans encountered the cultivated fields, they overwrote this plurality of names with a singular patronym: the native grass became *Microseris scapigera*. The name was itself

overwritten as quickly as it had overwritten others. Originally thought to be connected to a similar-looking grass in New Zealand, yam daisies were eventually found to be a different species and promptly renamed to reflect this more accurate classification (Atlas of Living Australia 2020).

Maybe this process of classification is bound to fail regardless. After all, it is an "enormous task, to make an inventory of reality. We amass facts, we make our comments, but in every written line, in every proposition offered, we have an impression of inadequacy" (Fanon quoted in Glissant 1989, x). All we manage are traces, black on white memories of co-constitutive ontologies. Native grasses are (re)arranged in cross-referenced herbaria: they belong in (are relegated to) dark archives. The traces they deposit in these monuments of Western knowledge are traces of persecution, "whitewashed" memories epitomising the alienation of humans from their environments through sanitising colonisation (105).

The superseding of a Latin nomenclature over a plurality of emplaced names obfuscates co-sustaining relationships. It isolates native grasses, sectioning them from the ground, tearing them from their beds as surely as the blades of livestock's teeth. It dissociates them from care. Duties and responsibilities, no longer embedded in vocabulary, are disregarded. Monster ploughs replace careful hands and specifically tailored tools. Ripping replaces tilling. Eaten alive, washed in acid, spat back up and down and up and down again, yam daisies travel back and forth through exotic digestive tracks. The drawings which accompany the botanical text prolong this tradition of separation. Poet Juliana Spahr elaborates:

> They made drawings of isolated plants against white backgrounds. The drawings are undeniably beautiful. But there is little reference to where the plants grow or what grows near them or what birds rested in them or ate their seeds and fruits or what bees or moths came to spread their pollen or how humans used them or avoided them. (2011, 69)

Symptomatic of the constant (re)establishment of the schism between nature and culture, botanical metonymy fetishises symbols while remaining oblivious to the place of entities within their larger environments, and the repercussions of their presences/absences on said environments. *Microseris lanceolata* unplaits emplaced relationships, it crosses them out, it denies they ever existed. Such incisive practices perform a constant (re)imposition of the colonial imaginary on the land. Sheep and cattle continue to be written into breeding; native grasses continue to be turned into weeds and museum relics.

Yet, herbaceous traces still speak through the page. Their poetics yells at me in the gaps of this over-detailing nomenclature. I try to reconnect paper and land. I alternate between studying botanical drawings and searching for live plants which resemble yam daisies. There is none. All I identify are other instances of *Microseris*; invasive species which feed on my hope and lack of knowledge to take over the space. Yet, I still stop the car, right now right here, every time I spot a yellow flower by the side of the road. New voices regularly join my herbarium. I no longer rush in a straight line, in search of beginning and/or end, in a display of "arrowlike nomadism" (Glissant 1997, 12). I retrace my steps. Detours occur. Yam daisies lift their heads when flowering so that

pollinators can easily access their nectar. Livestock gorge on it. Their teeth dig deep into the luxuriant green flesh. The milky sap makes them salivate profusely—it is so highly palatable. Yam daisies lift their heads again when their pappi are ready to be disseminated by the wind. In the cold morning, livestock's warm breath tickles them.

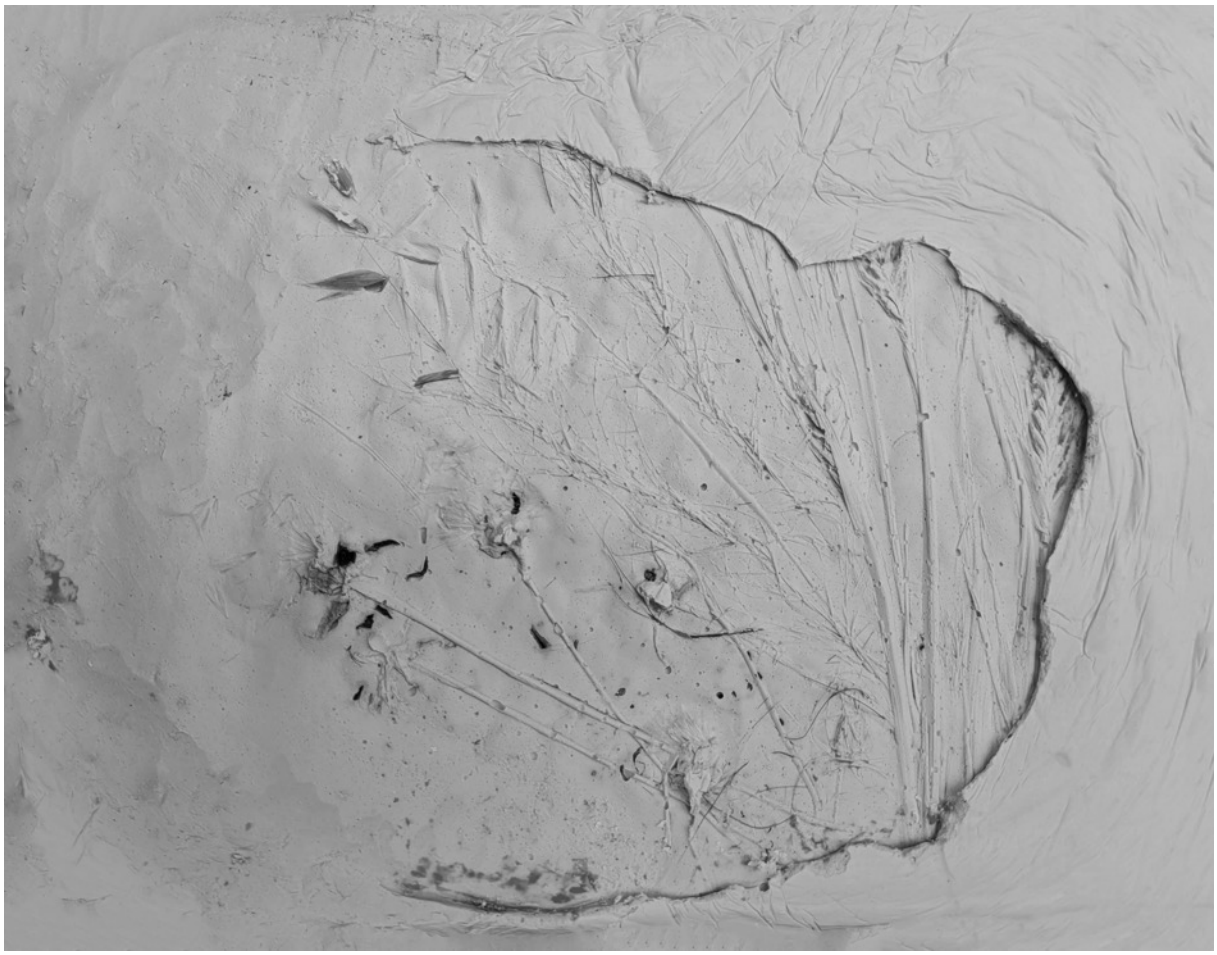

Plate 2 — Dandelion Folly (we reap what we sow)

Unlike kangaroo's feet, the hooves of introduced sheep and cattle lead to erosion. These hooves spread the European mythopoetic framework from page to land. They physically enshrine the overwriting heralded by botanical metonymy. As herds trample the land, its spongy and rich soils rapidly deteriorate. They are transformed into a hard surface which favours water run-offs and damaging floods (Pascoe 2014, 25–26, 43). Over 100 million heads of livestock now populate Australia. It is a stampede. The soil is compressed. Grasses recede. Boots, hooves and bulldozers lay the foundations of a new ecology. From plains to stomachs, compacted seeds asphyxiate. Fifty-two plants are listed as extinct under the *Environment Protection and Biodiversity Conservation Act 1999*. Traces are signs of loss. They hide in the soil, under the broken fabric of the land.

Native millet (*Panicum decompositum*) is a perennial grass which grows in dense tufts of up to 1.5 metres tall. Like wheat, its glabrous and tough leaves taper to a fine point, and its seeds are nested in open panicles which break off and blow away when mature. The first sighting of native millet

recorded in the *Atlas of Living Australia* occurs on 1st January 1770 somewhere in NSW (collectors J. Banks and DC. Solander). Native millet grows everywhere in Australia, except in lutruwita/Tasmania (Atlas of Living Australia 2020; South Australian Seed Conservation Centre 2018). Its seeds are edible. Ground, they make damper, a staple food for Aboriginal peoples according to explorers' and early colonists' records.

Fire-stick farming is precise.[4] Colonial records unwillingly indicate that each grass, each plant, each portion of the land, has its own rhythm of fire (Pascoe 2014, 119–20). This multitude of regimens answers to the ecology of each grass, each plant, each portion of the land. It optimises interactions and ensures enhanced yields (122–123). Relationships and entities flourish. I arrange and rearrange the dried grasses on the flattened clay. I handle their fragile pappi carefully: care means that the seeds won't detach.[5] I then use all my fingers to slowly press them into the clay. I think of how I am reinscribing them in soil after severing them from their soil of origin. Their new soil is uniform—it does not take their particular histories into consideration. Under my fingers, each grass is made to carve new relationships: they push against the clay and each other. As I work, I conceptualise their resistance or concession as the expression of their agency. Native millet flowers in autumn and summer. Its spikelets turn orange, red and purple like a sunset. Its vibrant green leaves dry the colour of wheat. I think of explorer and surveyor Sir Thomas Mitchell, who recorded in his journal (1839) that he "saw a numerous family of kangaroos this day, but although the dogs were let loose, such was the length of the grass, that they could not see the game."

Colonisation interrupted Indigenous agricultural rhythms by imposing imported rhythms whose intransigent and tyrannical character disrupted widespread patterns of alliance and coordination. Coercive and demeaning relationships replaced processes of cooperation and collaboration. Textures were rapidly inflected: "what had been productive agricultural land became scrub within a decade" (Pascoe 2014, 118). Understorey overtook fertile plains.

kingdom Plantae

phylum Charophyta

class Equisetopsida

subclass Magnoliidae

superorder Lilianae

order Poales

family Poaceae

genus Panicum

species *Panicum decompositum*

Philosopher Henri Lefebvre argues that "[w]hen relations of power overcome relations of alliance, when rhythms 'of the other' make rhythms 'of the self' impossible, then total crisis breaks out, with the deregulation of all compromises, arrhythmia" (2004, 99–100). Subjected to great tensions, a large portion of native grasses' habitat is deformed beyond instantaneous bodily recognition and ontological comfort: features are altered, disfigured, chopped and desecrated. Herbaceous traces retreat as a result of this arrhythmia. On the hard surface, they appear shaped into submission, into oblivion. Wind, salt and dust beat plains whose soil is no longer protected, anchored by roots.

An iconography of the land binding native grasses with humans is altered beyond instantaneous recognition. The soil is no longer where the traces of their relationships are etched. Instead, it becomes an "impressionable surface" (Carter 2010, 37–38). Ploughs march. They scarify the body of the land. Affordance hides. Spatial historian Paul Carter writes: "[European a]griculture is a culture entire, a mode of dreaming places into being. The clearing integral to its practices is also the 'clearing' of Western knowledge in which the light of reason is cultivated" (34). *Panicum decompositum* is further divided into seven varieties and three forms. Rhythmic fragmentation grows.

By rupturing co-evolving symbiotic agencies and severing bodily connectivities, European agriculture impedes the fluid dynamics of "meshwork," that is, the concatenation of rhythms which interpenetrate and configure each other (Ingold 2011, 71). Osmotic-like relationships between human and native grasses dissolve. Colonisation means that the land is occupied, rather than inhabited. Traces of embedded being-in-the-world are challenged by traces of a theatrical occupation of space. *Panicum decompositum* is highly prized as pasture for livestock. It "persists" best on clay soil under rotational grazing. If overgrazed, it becomes infinitely tall and less palatable (New South Wales Government 2020). It protects itself.

As I hike on the land, I feel the rhythmically unsound contours of landscape. Concreted carparks and signage delineate where I am to walk. Watch towers and fire truck are omnipresent in the background—always ready to let their sirens tear through the land in attempts to extinguish the ramifications of colonisation. This colonial racket long reverberates in the apocalyptic skies. All else falls silent. Philosopher Jean-Luc Nancy discusses the consequences of such an interruption:

> When a voice or music is suddenly interrupted, one hears just at that instant something else, a mixture of various silences and noises that had been covered over by the sound, but in this something else one hears again the voice or the music that has become in a way the voice or the music of its own interruption: a kind of echo, but one that does not repeat that of which it is the reverberation. (1991, 62)

Masked by the sirens of colonisation, herbaceous voices seem inaudible. And yet, it is through this silencing—through this interruption—that they precisely start speaking the loudest. For their voices are no longer solely rooted in place, connected to physical entities. Rather, this silencing produces endlessly morphing echoes—traces—with a life of their own. As Carter writes, "[t]his is the psychological depth of echoes: not to talk about the past but to resound it, easily, naturally" (1992, 19). Pushed underground by bulldozers, scattered by human hands across colonial

paintings and museums, relegated to the periphery by pesticides and fertilising superphosphates, traces of native grasses rebel like weeds: they start to multiply, to exist "beyond presence and absence" (Derrida 2006, 238 n. 12).

I pull the dried grasses out of the clay and all I see is the void left by their removal—curved and straight lines, dots of various shapes and sizes, all imprinted in the clay; hollow outlines where matter used to be. These traces are the haunting presence of an absence. Tenuous, fragile, always on the verge of dissolution, they carry the memory of their own disappearance. Anachronistic as much as prophetic, they contain that "[w]hich, moreover, never fails to happen also, but it happens only in the trace of what would *happen otherwise* and thus also happens, like a specter, in that which does not happen" (34, original emphasis). Herbaceous traces are alive. Following them results in being followed by them, in being "persecuted perhaps by the very chase" (10). As I pull up the weeds in my garden, I notice that their roots now run under the concrete slabs, allowing them to sprout in the driveway. Pavers move. The chase induces a notion of ineluctability: there is no escape. Herbaceous traces surround me, obsess me—I constantly attempt to grasp them; I fail over and over again. Their biology, their ecology, their distribution continue to blur. They flourish in every interstice—on the sides of highways, in unkempt nature strips, in the background of homemade documentaries and amateur collages, in the darkest corners of our parks and gardens. They scatter their invasive traces over everything that remains. As Derrida explains: "[a]nd one must reckon with them. One cannot not have to, one must not not be able to reckon with them, which are more than one: the *more than one/no more one*" (xx, original emphasis).

The instantaneous, fragmentary, disparate (heterogenous) plurality of traces implies an always-disjoining-and-colliding motion—an "irreducible distortion" which forces those who interact with them to undergo a "ceaseless recasting" (Blanchot quoted in Derrida 2006, 43). Herbaceous traces oblige me to endlessly reassess and redefine the terms of my relationships with them—to indefinitely confront the complex, traumatic legacies of destruction which drove vegetal ontologies underground; the complex, traumatic legacies which continue to deny native grasses their agency and persona. Following herbaceous traces reveals debts: it reveals the repercussions of colonisation on the Australian biotope; it highlights the damage we have caused. Traces constantly remind me of my duty to bear witness—of my duty to remember, follow and imagine, for as Derrida states, "[t]o be haunted by a ghost is to remember what one has never lived in the present, to remember what, in essence, has never had the form of presence" (1983). And so I keep looking for herbaceous traces. I handle the clay mould with great precautious: one misplaced finger could easily smudge and erase what I am trying to find.

Daily, pockets of remnant vegetation in highly urbanised areas remind me of how I am failing native grasses. Chiselled apices point fingers. Each pocket carries "life beyond present life or its actual being-there, its empirical or ontological actuality: not toward death but toward a *living-on* [sur-vie], namely, a trace of which life and death would themselves be but traces and traces of traces" (Derrida 2006, xx, original emphasis). Each pocket carries the memory of a plain. Baroque excess fills these interstitial spaces. They indefinitely grow and multiply. They resist. They proliferate. They signify everything and/or nothing—the fertile plain and the barren desert; sustainable land

management practices and intensive farming methods; the coming and going of renters, owners, lawnmowers and hoes. They are constantly renewed, never finite. The inherent plurality of herbaceous traces resides and thrives in these pockets. The trace is redundance (it is repetition). This disrupts both logic and linearity—it disrupts certainty. As Carter writes, "[i]t is by keeping open the possibility of another meaning, of another position emerging, that ambiguity assumes its responsibility" (1992, 17). The trace is tension (it is both what is occulted and what is revealed). I watch lines and dots disappear as I pour the plater over the mould. The trace is a tension born from the unfinished and ambiguous nature of any unveiling process. Baroque excess never occupies (colonises) space but lives (breathes in and with) it. It fosters and protects a proliferation of legacies and inheritances. When I softly shake the mould to be sure that the plaster has filled every possible space, some air bubbles surface. It makes me feel that the traces left by the dried grasses are breathing.

I patiently wait for the plaster to set and cure. The flamboyance of the pockets' herbaceous traces demonstrates that totality can only be imagined (grasped) and never encompassed (captured). These pockets thus embody the power of the irreversibly, irremediably opaque trace as a "nonprojectile imaginary construct" (Glissant 1997, 35). There, herbaceous traces speak of and open an infinite plurality of potentialities for native grasses. They forge tales which both echo and transcend physical absence or presence. They compose (their own) histories and futures through constant retelling (reformulation). Their agency is communal, multiple—mobile. It is unpredictable. Placed in contact, they (inter)react: they transform, merge, collide, confront, connect or repulse each other. They blur and undermine boundaries. To paraphrase Derrida, they work (2006, 9). They are in-becoming. They simultaneously assemble (are inspired by all grasses) and singularise (preserve the emplaced unicity—the integrity—of each individual strand of grass). By doing so, they ensure that native grasses cannot be transformed into projects. This is how they survive—this is how they thrive. This is how they overcome the controlling dissection of the botanical metonymy. It reaffirms their capacity (right) to disappear in the ground (to hide and protect), to reappear at the turn of a path, to proliferate in plains, in crevasses, on top of mountains, on the side of roads and railways, on the fringe of industrial estates, in alpine fields, woodlands, moist depressions, stream banks, on the margins of salt lakes and samphire flats, on fenced-off margins where no hoof, pesticide or fertiliser can reach.

Herbaceous traces do not negate contradictions. Rather, they hint, they allude, they trace the many paths, marks, tracks of colonialism's ramifications (they draw these words while I am still waiting for the plaster to fully dry). Their imagined totality contains both sacrificed autochthonous biotic authenticity and imposed biological hybridisation. They opacify to preserve and express the mass of the unsaid (the impossible to say), of the inhibited, of the repressed. They are the primordial cry: what stands silent in-between the words, what is left unspoken after a comma; what has several meanings, what is multilingual; what depends on contexts. They suggest an in-between space of creative frictions, attractions and repulsions which materialises a disjointedness through which I can be alert to what is not being spoken out loud. There lies the possibility of hearing—that is, of (re)imagining—silenced (silent) voices.

Once the plaster is finally cured, I slowly peel off the clay mould, layer by layer. Captured in reliefs once more, the physical presence of the trace is revealed. It becomes palpable: void has become voice. As I write, I realise that these words sit uneasily with the opacifying (po)ethics that I defend. My textual explorations of herbaceous traces imply that I attempt to represent the unrepresentable: to signify the (ongoing) attempted ecocide promoted and carried out by a large portion of the settler imaginary to which I belong. As philosopher James Hatley writes:

> the very attempt to memorialise the annihilated by giving them a body beyond their own within [...] this essay would be a betrayal. Such a gesture would repress the very significance of the other's vulnerability by acting as if the other's nudity were somehow capable of even the most cursory translation, the most tentative appropriation, as if one could feel the pain of the other for her or him. (2000, 246)

I agree that vulnerability is precisely what must be protected: its incommensurability composes traces. I do not pretend to translate this incommensurability. I only speak of and through my own experience of inheriting both cries and silences, presence and absence, presence-as-absence and absence-as-presence. I centre my words on my subjective engagement with herbaceous traces as they manifest as charred fragments or incandescent jungles. If this piece translates vulnerability, it is my own: treading on Australian land is never an easy nor anodyne act for a non-Indigenous person. I only speak from where I stand—I type these words on unceded Kaurna Yarta. I am acutely aware of the duties (of the ambiguities) of my position as a non-Indigenous researcher concerned with herbaceous traces. This is what my in-text performance (whether written on a page or in clay and plaster) highlights. Being performative means taking risks: it stresses my emplacement, along with the limits and inherent flaws of my practice, for there is no such thing as a finished or perfect performance (Dening 2009). But risk-taking is necessary. I remember Martineau and Ritskes' injunction (2014, 2): how else could "liberatory alternatives" be produced? Being performative represents a way to leave room for the unsaid and the unsayable—for the "Other." It implies that my voice, while bearing—and even exceeding—meaning, assuredly remains "recalcitrant" to its production: it is "what does not contribute to making sense" (Dolar 2006, 14–15).

Only through readers and viewers engaging with herbaceous traces on their own terms—by themselves—is sense to be made. But make no mistake: this is not an exercise in abstraction. Native grasses fiercely resist abstract manipulations—they have physical bodies; they have plans. I once hung yam daisies' flower buds upside down in a dark space in an attempt to find an alternative method of preservation. The flowers opened and then turned into pappi. They dispersed their seeds everywhere. Scattered alongside highways, buried in dark museums, dispersed in artworks and books, their traces hint at something much more concrete: relationships. More precisely, their materiality offers (is) and promotes a dynamic relational model characterised by reciprocity. Despite the distortions inflicting by colonialism upon our connections to biotopes, they show us how (they invite us), through aesthetic and imaginative processes, to reinvent our relationships with others not by appropriation or reduction (for how could what can never fully be encompassed be ever possessed?), but through resounding dialogues across disparate spatiotemporalities. Dialectical partners are key to any unveiling, (un)making process.

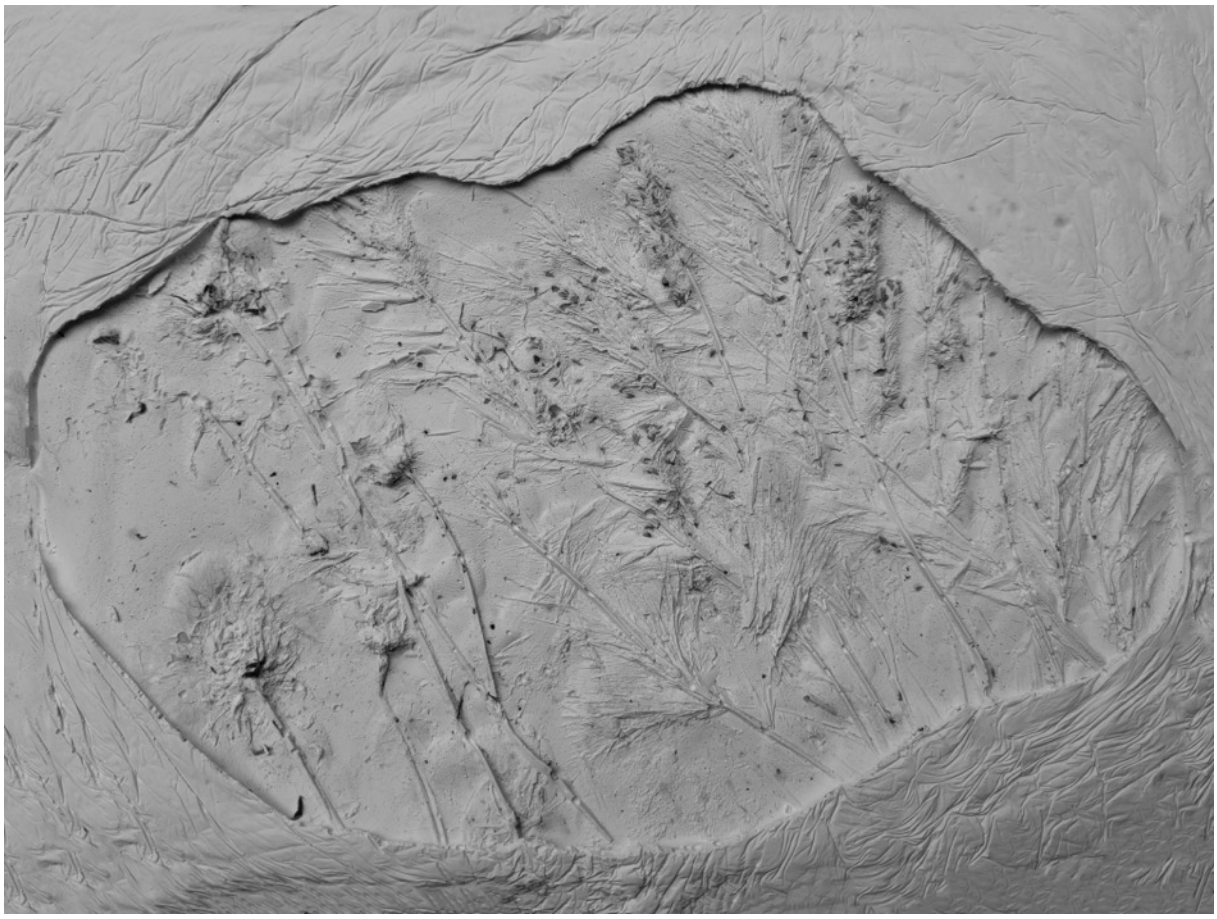

Plate 3 — Dandelion Folly (we reap what we sow)

Fires return. Uncontrollable, wild, they tear through the land. The army is deployed—we are at war. I watch the news and think of investigative journalist Jess Hill who explains: "the original Greek word for apocalypse—*apokalypsis*—does not mean 'end times'. It means 'to unveil'. This is the apocalypse we are living through: a process of unveiling and revealing" (2020). Seeds and tubers dance in flames. They burst and disperse. "They trace the void, through overly measured explosions" (Glissant 1989, 238). Grasses joyously erupt through the soil in the aftermath. They are reminded of the fire-stick farming methods which had become part of their ecology. Old horticultural rhythms are coming back to life. Some of the land's textures are regenerating. But how could I forget that these flames mostly destroy? Too hot, too high, too widespread, their burning tongues articulate the grief of plants into being. Our environments are calling. They are sending us costly reminders of our neglect, of our technological detachment which led us to believe that we had everything under control—as if we could.

The devastation of Ash Wednesday in 1983 was followed by a "phenomenal" flowering of native grasses, and especially of tuberous perennials (Niewojt quoted in Pascoe 2014, 120). So was the 2019 Cudlee Creek bushfire. The next spring, I hike in the nearby hills. Lush vegetation and skeletons of trees now cover the areas which burnt. The vibrant green of tall native grasses and thousands of saplings attracts the eye, an oasis of softness in the otherwise harsh, bronzed landscape declined in shades of yellows. I create more and more plates to add to the *Dandelion*

Folly (we reap what we sow) series; I add more and more grasses to each plate of the series; this growing number of plates and the increasing density of the traces they contain are translated into more and more words on the page—I imagine *a* totality (never totalising), which is driven (and stretched) by appositional richness rather than by reducing similitudes. This totality is fragile. It is unstable, partial, fragmentary, incomplete. It is forever expanding. It is boundless, open (to interpretation, to rewriting, to disintegration); open to become another totality, already. It is a totality-in-becoming. The "additive and accretive" nature of my approach is part of a reflective, reparative impulse (Sedgwick 2003, 149).

The performance of such a reparative impulse is ambiguous: it is not about repairing *stricto sensu*—it is about tolerating ambivalence (126). It is about positioning damage and care on the same plane, about holding them together on paper, clay and plaster in the same way that they comingle and co-exist in herbaceous traces. Such a performance attempts to signify the irreversible (or at least, not yet reversed) damage inflicted upon grasses, while also acknowledging and/or suggesting (re)constructive practices and alternatives. This ambiguity might be fed by the trace itself: it is both what is gone and what remains (what will come); it is void and voice. The process of creation of the artworks materialises this, where the meaning of damage, while always present, also constantly morphs.

Beyond flames, grasses are talking to us. Their discourse is fragmented, disjointed: it no longer comes from a position of co-dependence. Their thriving in the aftermath of fires that most humans desperately try to avoid and quell highlights a profound shift (a palpable rupture) in the relationships between vegetal and human worlds. It is a rupture in practice, a rupture in epistemology. And yet, what the fires and the grasses' reactions to them prove is that this rupture is in no way a severance. Flames, seeds and tubers remain involved in an intrinsic and fascinating *pas-de-deux*. Fires feed on plants and plants regenerate and spread through fires. They take their steps together on the stage of the land. The rupture is the sign of a fluid and immanent remaking—traces spontaneously combust to fuel constantly shifting new potentialities: "[a]nd not only the living is not afraid to stop, but it seems that the rupture is one of the steps of its advance. The rupture of the living is often the chance that is in it and that builds it, unmaking it for an elsewhere or an otherwise" (Glissant 2017a). The confluence and repulsion of historical forces that this rupture embodies sketches a connivence: paths (possible futures) are drawn in ashes. They speak of the need to shift unsustainable practices. They hint at ways in which sustainable practices could be rekindled; ways in which they could be reawakened afresh.

And some have been listening (some had never stopped). Old, revived and new practices have been burgeoning, as illustrated by artist and curator Jonathan Jones's exhibition *Bunha-bunhanga* (2019) which retraces the layers of meanings humans have attached to native grasses. At the Santos Museum of Economic Botany, Jones brings together excerpts from Mitchell's journal, pages from the State's herbarium collections, grindstones, soundscapes and sketches drawn over old newspapers. This juxtaposition of colonial and Aboriginal imaginings/objects continues at the Art Gallery of South Australia where, within the same space, Jones displays colonial paintings depicting landscapes bearing the undeniable marks of Aboriginal land management practices alongside

some of the tools used to shape these landscapes, bouquets of dried native grasses and jars of their seeds/grains.

Art/fiction writer Prudence Gibson and evolutionary ecologist Monica Gagliano write that "[a]rt is more than a representation, more than a means to uplift (although it can do that too). When art is good, it instils a commemorating force" (2017, 140). Jones' work most certainly acts this way. Inspired by Pascoe's research, it offers a striking visual representation of his findings: traces intertwine with traces of traces, to paraphrase Derrida. The exhibition also demonstrates that colonial art "instils a commemorating force" too: beyond its intent, it safekeeps the very environmental voices and relationships that it is also attempting to erase. Its failure then, is not a failure of perception, but a failure of interpretation. It is the product of a culture which is not trained to read (to learn), but only to possess. As Glissant states: "[a]t bottom, the trace is truly trace, that is to say a figure of the collective unconscious" (1957, 29).

Like Pascoe, Jones does not pretend to be rewriting history: "the history was written by other people" (Pascoe quoted in Marsh 2019). Instead, by exploring Aboriginal relationships with native grasses through early colonial artefacts, Jones generates forced juxtapositions which recontextualise and reframe (recalibrate) History. He provides a space where the overwriting of a sophisticated agricultural system by ill-adapted practices imported from Europe feels palpable, obvious. Jones explains that "this process of unraveling is something people who have been left on the periphery can do best, un-packing and re-packing, within new cultural models, which often takes the material we know and shifts it into new light so it can be seen afresh" (Baillie 2016). Such a discerning analysis reminds me of Derrida, who ponders if "the end of history is but the end of a *certain* concept of history" (2006, 17, original emphasis). After all, history is nothing more (and nothing less) than the science of traces (Ricœur 2003).

Herbaceous traces act as sites of memory. They are testimonies; they carry tracks and histories in their midst—my role is to follow and listen. And as such, beyond commemoration, Jones' juxtapositions produce a spatial grammar which requires constant (re)interpretation. Shifting associations arise as painted, recorded, sketched and dried traces interact. They come together; assemble, connect, disconnect and reconnect; morph and move, forever deconstructing the linear pattern of the colonial order to preserve their agency and multiple layers of being-in-the-world, never occulting the complexity of both their ontologies and the repercussions of the colonial encounter upon them. Seeds disperse in the wind. Meanings keep proliferating—boundless, imagined, future. *Bunha-bunhanga* means abundance.

These juxtapositions generate an accumulation of meanings. Their imagined totality is not the sum of all parts but represents their relation to come and leaves the conclusion unresolved (Glissant 1969, 90). The unforeseeable nature of traces' imaginary fusion/friction suggests and/or fosters the development of a flexible and polymorphic in-between space. In this space, times and geographies tangle. Chronologies, these "passive heirs to the past" (Glissant 2000, 8), *se choquent et s'entrechoquent* like creolising languages. They collapse. This leads to the articulation of an autochthonous *longue durée* defined outside of cultural notions of time. It activates interstices for

what is not (yet) known, what can (no longer) be told, what is to happen. This is not solely happening within institutional walls. It is also taking shape in the open, underground, in seeds and tubers. Herbaceous traces work (as Derrida argues)—on soils and in minds.

Agricultural projects involving herbaceous traces are flourishing all over Australia. The shift in human practices that they require remains limited: only plants suitable for human consumption, plants which appear to be at the service of humans, are concerned. Yet, for this service to be provided, such a shift nonetheless requires a redefinition of the terms of the relationship between human and these specific plants. Native grasses do not require irrigation, pesticides or fertilisers (Pascoe 2014, 37, 52). Instead, they request of humans to respect their environments. Productivity does not come through degradation but through enhancements which rest on reciprocal networks of care. As environmental biologist/plant ecologist Robin Wall Kimmerer explains, all things are interconnected and "[a]ll flourishing is mutual" (2013, 15). The revival of these grasses' cultivation in Australia is articulated as a potential solution to the multiple environmental crises assaulting the land (Pascoe 2014, 146). New narratives emerge and frame native grasses as extremely nutritious saviours.

The rebirth-survival of agricultural practices which rely on reciprocity points towards a (re)connection with the soil—demeaning global pressures gives way to multitudes of local energies. Haunted by herbaceous traces, some humans revive economies of co-dependence in mutated forms. An "alterbiopolitics" ("alternative paths in the politics of living with care in more-than-human worlds") is in its infancy (Puig de la Bellacasa 2017, 130). It slowly reconstructs moments of exchanges where tubers grow larger and seeds more numerous in response to human care. Recipes (re)surface—traces of knowledge from time immemorable interact with creations influenced by international cuisines. As Pascoe explains, "[t]elling a historical story through food is a gentler way than talking about massacres. We need to talk about massacres, but if we want real improvement, perhaps we need a gentler conversation" (2021, 131). This favouring of reparative discourses over privileging the exposure of wrongs is contentious (Sedgwick 2003, 126), and by Pascoe's own admission, not ideal. However, it might represent a necessary step in the process of crafting spaces of exchanges from which an alterbiopolitics can grow. Pascoe's statement makes me think of the words of visual artist Judy Watson. I keep them in mind as I press grasses in between pages:

> Art as a vehicle for intervention and social change can be many things, it can be soft, hard, in-your-face confrontational, or subtle and discreet. I try and choose the latter approach for much of my work, a seductive beautiful exterior with a strong message like a deadly poison dart that insinuates itself into the consciousness of the viewer without them being aware of the package until it implodes and leads its content. (Watson and Martin-Chew 2009, 226)

Reparative practices which orient or aestheticise histories are not about avoiding unpleasant truths; they are about getting their human audience to engage. And the rest will come later. Once engagement has occurred, then listening and awareness become possible.

Grasses' cultivation and their culinary uses provide that pathway. Traces travel through bodies—they gain new physicalities. I remember making dandelion salad as a kid in France. I remember how much I loved collecting the leaves in the fields and how much I disliked eating them because of their bitterness and chewiness. Now I crave their taste and texture. I hunt for their trace in rocket and watercress leaves. Intimate gestures of food cultivation and preparation are conduits for renewed relationships. As Pascoe explains, seeds and tubers are "more than a commodity; [they are] a civilising glue" (2014, 137).

Following herbaceous traces apposes colonial and decolonial imaginaries. This illustrates what Glissant calls an "aesthetics of the earth" (1997, 150). Embodied in traces, this aesthetics is born from entanglements: cultures and biotopes endlessly collide and collapse in its midst. Their traces constantly emerge and recede. The costs of these encounters on and through the soil is at times obscured, but never obfuscated. For there is a (slight) difference between the physicality and poetics of the soil (Glissant 1981, 262). One cannot be reduced to the other. The soil swallows traces—and its poetics seeks to retain, translate, elucidate and unveil these traces. As such, an aesthetics of the earth preserves and/or reconstructs the opacity of a soil ploughed by colonialism, of a soil intentionally flattened, deliberately rendered uniform; of a soil wished without traces—without pasts. Chiaroscuros and veinings (re)appear: herbaceous traces only unveil on the underside.

> [...] sap wallaby grass kangaroo grass *like a field of wheat three feet tall* wild sorghum blown grass native flax seeds hovea pods cumbungi common reed water ribbons 200 tubers per plant tall and tuber spike rush slender bitter cress leaves and stems marsh club rush tubers roasted pounded into cakes nardoo sporocarps soaked ground [...] (Crisp 2019, 21, original emphasis)

In (re)staging the critical entanglements of human and herbaceous traces, Louise Crisp's poem—like Jones' exhibition, like Pascoe's text—exposes and delves into the fracture lines of the colonial narrative. My approach is similar—it is phytographia: "the encounter between the plants' inscription in the world and the traces of that imprint left in literary works, mediated by the artistic perspective of the author" (Vieira 2015). Phytographia intimately intertwines plants and humans' sensibilities and ontologies—it patches their forms together like a collage. It embodies the promise of a world constructed on their co-dependence: one can no longer thrive without the other. It demonstrates the futility (irrelevance) of attempting to impose a supposedly logical progression on native grasses—they have their own agency, through wind and soil, through chemical emissions and ecotransmissions. It demonstrates the fragility (impermanence) of our hybridised biotopes. It highlights the need to live in (celebrate) their ephemeral forms. Because, as Glissant explains, "[t]he suffering of [...entities] cannot be spoken; only their hope, their presence" (1969, 13).

Such works reassert that following traces corresponds to going through an infinite process of unveiling (Glissant 1969, 177–180). There is no end; there is no truth— only a "way of existing in the world" which represents "a lasting suspension between the impossible-to-know-of a beginning and the impossible-to-foresee of end" (Glissant 2017b). Such a process is vertigo—past endless collapses into presents, into futures. It does not seek to elucidate or resolve the destructive

outcomes of colonisation; it does not "presuppose an immediate or harmonious end to domination" (Glissant 1996, 106). Vegetal and human worlds remain a long way from prospering through tight collaborations. Instead, such a process highlights the need to relate and co-evolve in infinite spiralling, cyclical mosaics. It highlights the need to disallow and recast representational models (patterns) which reproduce and sustain the destructive subjugation of the vegetal world at play in any instance of domination. As Serres injuncts: "[o]ur voice smothered the world's. We must hear its voice. Let us open our ears" (2014, 42).

I grew up surrounded by wildflowers. Daffodils, dandelions and buttercups took turn in colouring my world yellow in spring. Now a city-dweller, I witness how biomimicry fills medical and architectural spaces. The vegetal world is part of our constitutive mythology. It punctuates and permeates our identities and practices (actions). It defines who we are. Its sinuous traces contain it all: what has already happened, what is in the making and what will happen. Following them reveals this world's shaping force—or, to extrapolate on Glissant's concept of "geomorphism" (2006, 176–177), it reveals its "chloromorphism" (a vegetal poetics integrates and transcends humanity).

Our legacies of fire encircle us. Subterranean flames spread through roots in rich soils. The apocalypse has arrived. Native grasses endlessly unveil and reveal themselves within and beyond human records. They leave traces for us to follow; traces which hint at other ways to perceive and relate to them. Through roots, tubers and seeds, their intricate patterns of being-in-the-world play a mediatory role: they enable humans to teach alterbiopolitics, in the sense of Glissant who writes: "[t]each, that is to say: learn with" (1969, 245).

Notes

[1] All translations from French are mine.

[2] My understanding of decoloniality is nested within the oeuvre of Glissant, who articulates it as the necessary discursive deconstruction and fragmentation of the uniformising pressures imposed by colonialism (and later, globalisation). It requires to embrace the unity-diversity of knowledges and modes of knowledge production encapsulated in languages, where words sustain sensibilities and imaginaries which are being constantly reinvented through repetitions, reiterations and accumulations. As such, decolonial thought acts as a barrier against any kind of anthropo-andro-Eurocentrism.

[3] I envision opacity after Glissant, as a mechanism against appropriation (1990, 67–68). There is a loveable opacity in the term "trace" itself, rich of so many definitions, deliciously unbounded and constantly reshaping. Traces are tracks, paths, marks, signs, imprints. Interestingly, Derrida deliberately refuses to use a single term to refer to traces: among others, specter and différance carry similar meanings (2016, xxxiv).

[4] See Pascoe 2014, 48–49 for further details/references on fire-stick farming.

[5] As I proceed, I also recall environmental biologist/plant ecologist Robin Wall Kimmerer explaining how, in Potawatomi culture, sweetgrass is braided "to show loving care for [the earth's] well-being" (2013, 203).

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Biography

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PERFORMANCE
PHILOSOPHY

BECOMING ENTANGLED: QUEER ATTACHMENTS WITH HEMIPARASITES

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What is that queer plant that drapes itself chaotically over the top of trees and bushes? You know the one along the road on the way into town?

Ah yes! You mean the one with no leaves that looks like tangled yarn caught up in the branches?

Yes, it looks like its floating airborne on top of the canopy, smothering and embracing at the same time.

Well, that's the one with the common name of snotty gobble or Dodder-laurel!

I can't stop thinking about it.

Dodder may look chaotic but that only depends on how you view it.

Let's find out what it's doing.

> 'If we can "see" the vegetal world once more, we might remember what we are. Plants are the key to curing vegetal blindness'. (Gibson 2018,1)

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Introduction

We write from the unceded lands of the Dja Dja Wurrung people in what is now known as central Victoria, Australia. Our homes on the edge of the range are surrounded by a complex mix of native vegetation, invasive plants, garden plants, recovering landscapes, and various colonial remains overlaying Dja Dja Wurrung country: an assemblage that is typical of settler colonial lands after more than two centuries of dispossession, settlement, 'improvement' and degradation. This area has been shaped by colonial extractivism, firstly in the form of violent dispossession and settler pastoralism that was quickly superseded by extensive and intense gold mining. In the 1840s, Europeans and their sheep invaded Victoria displacing local Indigenous peoples and parcelling up the productive land among the squatters. However, it was the 'discovery' of gold in 1851 that most profoundly shaped the region. By 1852, 40,000 people had swarmed onto the local goldfields and the wide scale destruction of the land commenced leaving a completely transformed landscape, hydrology, vegetation and ecology (Annear 2012; Boyce 2012).

Today we live in a recuperating environment of coppiced trees—mostly Box and Stringybark with a few Ironbark—and an understory of acacia, herbaceous shrubs and various groundcovers. You have to be careful where you walk as the ground is littered with pits and ruins, and extensive erosion has formed deep gullies with unstable edges. We also have to be careful not to damage the mosses, small perennials and wildflowers that carpet the ground. The eucalyptus dominated forest is a colonial artefact. The earliest settlers reported sweeping expanses dominated by banksia along with drooping sheoaks, wild cherry and acacia. It is the hardy gums that have been best able to persist the onslaught of colonisation and mining (Lunt 2013).

The vitality and dynamism of nature is evident in this renewed, and indeed novel, plant assemblage that is considered to be 'characteristic' of central Victorian Box-Ironbark forests today. As the miners retreated due to declining gold harvest, trees resprouted from stumps and plants took over the ground. The plants knitted and knotted bits of the old and the new into a complex habitat, creating an emergent natureculture of postcolonising, recuperating lands. The vegetal volunteers that sprouted and the remnants that expanded actively generated the present-day landscape. Much of this area is now part of The Castlemaine Diggings National Heritage Park, and the 'resilience of natural features in the face of change' was noted as a key value in setting up the park (Frost 2010; Instone 2017). The resistance, power and agency of plants continues to astound and surprise us.

Although scarred, this is a vibrant, changing, and exciting place. It provokes us to forge 'risky attachments' with unlike others across the human non-human divide (Instone 2015). This is not an idealistic gesture, but an 'active relation of hope and connection in which we cannot predict the outcomes, where we risk opening ourselves to possibility' (29). Stengers says it is the risk of hope, feeling and thinking that 'oblige me to think and feel in a new way,' a way that induces 'the powerful sense that something else is possible' (Stengers in Zournazi 2002, 246, 248).

This paper explores how we became ensnared by the planty agencies of the local hemiparasites—Dodder-laurel, Mistletoe and Cherry Ballart[1]—through reflecting back on our multispecies and human interactions in the course of developing the art project *Becoming Differently* (2018). We trace how plant parasites came to be an important theme of the art, how they infiltrated the artworks, how they changed our understanding of parasites, and how they enticed us into the bush and developed our style of collaboration. During the development of *Becoming Differently*, the agency of plants crept in to extend and deepen the exhibition theme of unsettled belonging. Almost by default we experienced a 'learning to be affected' in Bruno Latour's terms of being 'moved, put into motion by other entities, humans or non-humans' (2004, 2). The plants drew us into further investigation of the vegetal world.[2]

Further, we are interested to 'queery' what it means to be 'drawn towards' particular plants, we wonder who or what is 'drawing,' and how these particular plants inflected our art and writing and drew us into a queer world of 'unconventional' relations. We consider how we grappled with practices and modes of engagement involving complex issues of identity, belonging and nature in a settler-colonial situation, and how this led to us to become differently entangled in place.

We take our lead on queer worlding from Donna Haraway (2008, 2016) and from the parasitic vine Dodder-laurel itself. They both teach us about entanglement and the dangers of sorting, neatening and categorisation that draw boundaries and make regulatory structures. Both Haraway and dodder insist that we be *in* the tangle in a multidirectional mode, finding meaning through being present in the mess and complexity of 'being-with.' As Haraway says, 'queer reworlding depends on reorientating the human [...]' (2016, xxvi). 'Queering,' she says, 'has the job of undoing "normal" categories, and none is more critical than the human/nonhuman sorting operation' (xxiv). Haraway's notion of queer worlding interrogates the way we think of species as discrete types. She conjures a 'dance of kin and kind' to escape the strictures of dualistic constructions of sex and race, instead thinking in terms of 'with' and 'across.' Haraway uses the figure of messmates at the table to invoke the queer relations of transpecies kin entanglements, construing the companionship of eating together, queer kin at the table, as outside of, and questioning of, heteronormative and anthropocentric conventions. This is a never finished meal, always in process, always in relation, but 'complete with all the acidic consequences for all the diners' (xxvi). Likewise, dodder's parasitic habits stretch what it means to sup together, amplifying the uneasy sense of being off-category.

We understand place as a lived encounter. Our relationship with plants is not primarily academic (although that is part of the story); we are swept up in the 'romance connecting people, plants and place.' In Anna Tsing's terms, we love, we are in love with, this place (Tsing 2012,145). Our love sits in uneasy relation to the colonial history of this place. As Ginny Battson writes, 'if we see love, instead, as being something other than union, like the mycelium, a passage of consciousness, love may be THE call to act, and a light shining upon not ourselves but those we love' (2015, emphasis in original).

In the paper we pick up on Haraway's insistence of speculative practice to encourage us, indeed demand, an openness to including dream, art, narration and critique in the *how* of investigation.

We follow Prudence Gibson (2018, 12) and others in experimenting with writing style in the hope that we can entangle you the reader in our world and share our complex feelings of love, unease, trepidation and, in the case of the parasitic plants we are writing about here, disconcerting awe.

Dodder-laurel (Cassytha melantha)

Figure 1: Dodder-laurel entangling the local landscape, Fryerstown. (Image courtesy of Down the Road Projects, 2020)

We have been driving past this veiled site for years, but it was only after we realised what it was, that it drew us like a magnet, and still does. On the way to this spot we pass tangled tree tops, massed with stringy vines that weave, drape, entwine and appear to smother the roadside trees. The trees are like sentinels presaging the shrouded site to come. Driving from our homes towards town, the road takes a sharp left turn at the top of a crest before descending towards the creek. It cuts through a moderately steep-sided cutting with no space to stop and where it is too dangerous to slow right down. On the left-hand slope is a dense mix of mostly small gums and wattles, and invasive plants such as gorse. Laying over the top of the entire slope is a thick veil, a meshwork, of the hemiparasite Dodder-laurel. This tangled, messy, shocking, snarled and jumbled scene fills us with a mix of awe and disconcertment. What also makes this site compelling is its unapproachability. Despite our longing to get a closer look at this extraordinary confusion of plants, we have to content ourselves with quick glimpses from the car window as we travel at speed on the country road. We've tried to approach it on foot, but due to the particular geography of the

position we are forced to gaze at it from above. The dodder takeover of this area is unique to our knowledge. It has so completely smothered this part of the slope that it's surprising that any other plants survive. But they do and the area continues to thrive in its weird confusion. Dodder peaked our curiosity and drew us into a state of action. We had to meet dodder.

Dodder-laurel is not an exotic invasive but a hemiparasite native to this area. Hemiparasites such as Dodder-laurel by definition have the potential for limited photosynthesis therefore producing some of their own energy, and taking from their hosts' water and minerals (Forester n.d.). They do this by making attachments to the stem of the host plant via specialised rootlike structures called haustoria. 'The haustoria enable the xylem, the mineral and water conducting vessels of the parasite, to contact the xylem of the host and extract these precious resources' (Whitington 2017).

Dodder is green, wiry, swirling, matted, encompassing, and it attaches to trees and shrubs with small oblong haustoria every half metre or so. We thought it was a strangler vine and assumed, wrongly as it turns out, that the smothered trees and shrubs would soon be dead, but hemiparasites rely on the host remaining alive for their continued existence. Because of its parasitic, smothering habits, and its apparent weird leaflessness (actually the leaves have shrunk to scales), dodder of all kinds has many names—snotty-gobble, devil's lair, devil's twine, jungle string, love vine, strangle vine, strangle tare, scaldweed, beggarweed, lady's laces, fireweed, wizard's net, devil's guts, devil's hair, devil's ringlet, goldthread, hailweed, hairweed, hellbine, pull-down, strangleweed, angel hair, and witch's hair. Many of these names derive from an unrelated plant Cuscata species, or so-called 'true' dodders. Cassytha species (Dodder-laurel) have evolved to mimic Cuscata species, or vice versa, or perhaps they each figured out a form and livelihood that allows them to flourish in certain places as unrelated twins; a form of evolutionary convergence. Strange how plants from different species can find a way to become almost indistinguishable, yet be so different from other members of their own plant family.

Dodder-laurel makes a sort of hairnet in the foliage, a mesh joining unlike plants into a multiple organism. It raises questions of what it means to be a host and to be unwillingly drawn into a wider network of asymmetric and nonreciprocal relations, to no longer be an individual, but caught up in the lives of unlike others. It raises the question of where hospitality and hostility begin and end (Serres 2007, 15).

Dodder's planty agency also ensnared us. We too feel caught up in its hairnet, in multiple ways; not physically, but rather creatively and emotionally, drawn in by a mix of horror and curiosity about its bewildering habits and weird morphology. At first glance the onlooker sees a totality of form, roundedness on the tops of trees, waterfall veil down the slope. But the harder one looks the more blurred and entwined it appears, and we are drawn into dodder's entanglement, and become lost in its apparent mess. There is an urge to neaten and untangle the landscape, to restore the expected sight of trees, shrubs and herbs. But the utter impossibility of this forces acceptance and a giving-in to the beauty and agency of seeming dis-order, a shedding of control that opens us to see Dodder-laurel as simultaneously dangerous and vulnerable and to stay with it in a space of allure and mystery.

Meeting Dodder-laurel

(A dream)

> *He visits his neighbour down the road. She tells him about a dream she had the night before. In the dream she has her long hair cut off. The hairdresser flips her long tresses over the back of the chair and methodically starts cutting. She doesn't dare look in the mirror to see her new look, but concentrates on the growing pile in front of her, admiring the lustre and range of colours that make the hair her hair. 'I'll take it home,' she says, not sure why, or what she'll do with the severed tresses. The hairdresser had put a rubber band around the cut hair to keep it together. But somehow the rubber band strangles her hair, robbing it of life and vitality, so that by the time she gets home and places it on the kitchen table it seems to have died. Haunted by its apparent demise but insistent presence she tosses the hair into the bottom drawer of her wardrobe to forget about it. When she wakes up, she puts her hand to her head and finds that her hair has all gone. In its place grows Dodder-laurel vine. Over night she had become a host, a vector, a target of a parasitic vine. She can feel its suckers attaching, extracting, adhering, feeding, drawing nutrients, growing long tendrils that go off in search of the next anchor point, the next port of sustenance. A tangled green wiry mass blankets her head. (Instone 2018)*

We finally 'met' Dodder-laurel in close proximity when we tracked some down during a walk in the bush. We were able to discern the details and textures of its tangled, leafless stems and noticed its small green berries and aerial habits. Paying attention to dodder's liveliness and vitality, its particular plantiness, dispelled our initial sense of foreboding and menace. After the seeds germinate and it finds a suitable host, dodder abandons its roots and takes off outward and upward, no longer burdened by the earth, by place of origin, by the fertility or not of where the seed has fallen. It heads skyward for an aerial existence of intemperate abandon. Rootless and free it loops and spreads, entangles and enmeshes, reaching across to other plants to enjoin them in its anarchic network. It's an airborne rhizome, in Deleuze and Guattari's terms, that eschews roots, branches and leaves. Like other parasites, it finds alternative modes of life that cut across the expected ways of things. Its aerial travels are not arbitrary, as we thought, but rather it searches out its host hunting for the healthiest specimen to engage. It's lively and exploring. Its daring tendrils take off in all directions, its green wiryness weaves complex passageways through trees and shrubs, creating secret spaces where we couldn't see or go; it makes a life among others that exceeds its burden on them.

Figure 2: Dodder-laurel cascading from treetop, Fryerstown 2020. (Courtesy of Down the Road Projects)

Japanese gardener Midori Shintani notes, 'Every time we meet a plant, our minds keep moving with feelings of surprise, joy and sometimes fear' (2020, 62). 'A little fear for plants,' Gibson states, 'reminds humans of our true place in the world' and that 'some plants are wicked, some are defiant, and others cannot be controlled' (2018, 2). This describes our feelings meeting dodder. There was initial fear seeing dodder from a distance and the sense of entrapment it created in us as a result of its smothering habit. Now proximity revealed a different experience, a mingling of fascination and growing respect as we came to realise how this plant behaved, tracing paths beyond our comprehension.

When species meet, as Donna Haraway says, the provocation of curiosity leads us to a sense of obligation and deep pleasure (2008, 7). In the physical world as species, we are not companionable with dodder, but not so in the dream state. The dream state brings dodder and person together in a Surreal mixing of species. The person-host gives in and accepts this new corporeal turn as vines replace hair. It is at this point that we are reminded of Cate Sandiland's question of 'who we are to plants [...] not just what plants are to us' (Cielemęcka et al. 2019, 13).

Latour (2004) insists, learning to be affected is a generative interaction. It is not a matter of attuning to a pre-existing world out there—the old human/nonhuman binary—but understanding how the performative interaction of bodies of all kinds is generative of the world. We were being put into 'motion by new entities whose differences are registered in new and unexpected ways' (5). A point reinforced by Haraway when she famously says things don't preexist their relating (2008). Meeting Dodder-laurel enlivened our world and led us to make new linkages and consider different

alignments of things. It disrupted the received meanings and understandings about parasites, about the bush where we live, and we learnt that things fit together in unexpected and multiple ways, and in that performative moment of differentiation we too became differently. Learning to be affected, says Latour (2004), is not about a body taking in more of the world around it; rather, it's about breaking down the subject-object binary and becoming open to being affected. Dodder-laurel opened us to 'see' plants.

Dodder-laurel is part of the fabric of life here, but its smothering habits and strange form force us to think beyond the usual appreciation of the bush as a tree/understory assemblage of different species. Dodder provokes us to face the unsettling situation of a more complex, more differentiated bush landscape, and to understand the plants that make up the bush through a relational lens. In isolation Dodder-laurel appears destructive and problematic, taking over trees and hillsides, but seen through its relations as part of the forest assemblage it is possible to discern the positive and important roles that it and other hemiparasites play in the overall ecology of life in this place. Parasites multiply life beyond considerations of the individual plant. Plant parasites need other plants, and the forest ecology is richer for their existence (Kriedemann 2018, Watson 2009). As Bolton notes, 'The parasite's disruptions, then, do not simply subvert or oppose the structure of the system, but also constitute a necessary event in a process of reconfiguration and renewal of the system' (2016, 2). Dodder refuses symmetry, refuses equilibrium and balanced exchange, it refuses unitary modes of being. Dodder insists on connection, co-production, movement and multiplicity. It puts its stems to a new use to tell different stories of bush life.

Collaborating with dodder

The masses of dodder vines which hang from trees in the landscape inspired the installation titled An Indian spice table/dodder vine/mistletoe/haustorium/the dead hair of a cultural geographer/unidentified bird nests/a collapsing form/eucalyptus branch/Swarovski crystals (2018). It consists of a traditional Indian spice table with a range of materials, predominantly dead dodder, piled high and set against the gallery wall.

Figure 3: An Indian spice table/dodder vine/mistletoe/haustorium/the dead hair of a cultural geographer/unidentified bird nests/a collapsing form/eucalyptus branch/Swarovski crystals (from of the installation, Becoming Differently (2018). (Image courtesy of the artist)

(The studio)

Intrigued by Dodder's entangled forms which were both beautiful in their formal complexity and dangerous in their capacity to snare things, he started to collect them as they fell to the ground, bringing them into the studio and piling them on the table, each supporting the other, allowing the work to build itself as idea, material, form and content coalesced. Serendipitously, another form of collaboration occurred as a native bird built a nest in the developing sculpture, which meant having to wait until the eggs hatched before continuing. This encounter became crucial as he began to understand this sculptural form not just as an artwork. He watched this bird making its nest; collecting, building, producing. As an artist he too was collecting, building and producing. The bird's actions shifted the artist's relationship to process and material. More significantly, it reoriented the experience, performatively creating a more complex artistic methodology that linked the sculpture to the world. He was able to realise that initial fear of the dead dodder gave way to beauty, value and meaning in ways which were felt and experiential. As a migrant, he was building home in the Australian bush and the Australian bush

and its habitat was accepting and drawing him into its own space. Beside the aesthetics of form, he became more enthralled in this structural and metaphorical dance between collapse and support and now collaboration, and how this evolving form somehow was able to speak poetically to multiple narratives across time and space, here and there, belonging, cohabitation and reciprocity.

The installation both emerged from, and worked towards, an aesthetics of interaction and connection, highlighting the inseparability of situation and embodied subjects. The active encounter with dodder in the making of the installation put us into motion. Firstly as encounter in the landscape, then as its form represented photographically and finally as material in the sculpture. It was at this point where the material form of Dodder-laurel became most potent, encompassing, enlivened and enveloping. Working with dodder as material took on its own sense of becoming, expanding the notion of collaboration. It forced a letting go by the artist, and paying attention instead to the potential of what dodder itself could do. In other words, leading and enticing us on what to do next, no longer 'a mere decorative feature subservient to us' (Angelucci 2020). While building the sculpture, the material strangulating form of dodder lent itself to absorbing (literally) the space it occupied, no longer withheld by figure/ground conventions, but rather becoming active in doing its own 'thing.'

'Thing-power,' as Jane Bennett calls it, that is the 'nonhumanity that flows around but also through humans,' drew us into 'greater recognition of the agential powers of natural and artifactual things, greater awareness of the dense web of their connections with each other and with human bodies, and, finally, a more cautious, intelligent approach to our interventions in that ecology' (2004, 349). Importantly, it was the network of relations between us, dodder and the many other elements of the sculpture—the hair, the nests, the spice table, the haustorium—that animated the whole. Bennett explains that 'a material body always resides within some assemblage or other, and its thing-power is *a function of that grouping*. A thing has power by virtue of its operating *in conjunction* with other things' (353–4, emphasis in original). The installation was a sort of active becoming in which we recognised that we could not disentangle ourselves from dodder, as human and plant spun together in a vital materiality of congealing bodies (Bennett 2010). In the exhibition, Dodder filled the space of the gallery in a consuming way, absorbing other material forms embedded in its galaxy.

Parasite and host

The parasite and the host are conceived as two separate identities linked through an exploitative relation in Western thought. The overarching and singular notion of things parasitic draws on the negative spectre of the vampire, the predator, the unprincipled opportunist. In Western culture, we're inclined to see a victim-freeloader relation that fits with a Darwinian survival of the fittest model. Parasite equals bloodsucker, scrounger, pest, hanger-on, sponger, idler, user, slacker. But such a view limits the possibilities of identity, makes things this or that, one thing or the other, and posits the host and parasite as separate and antagonistic. It narrows focus to the individual level and forgets the wider ecological and community contexts in which host-parasite relations survive and thrive. What is surprising is the many forms that parasites take, the different relations they

make, and their different modes of attachment. A multiplicity of host-parasite relations calls into question received meanings of the parasite as a straightforward and singular relation of dishonorable gain. Some do kill the host, but most don't, and indeed the hemiparasites (or half-way parasites like Mistletoe and Dodder-laurel) rely on the host remaining alive.

Hemiparasites like dodder take and redistribute, they pass on resources from the host to understory species, increasing diversity in their locality of bush. Watson says parasites are keystone resources that boost species richness at the local and regional scales and have a 'disproportionate influence on community composition and ecosystem processes' (2009, 1152). Parasites, he says, redistribute resources at the community level for the common good. They mediate higher concentrations of soil nutrients so that neighbouring plants are enriched, and they provide nesting, food and shelter for birds and animals. Mistletoe, for example, 'By contributing more litter containing more nutrients available over a more extended period,' creates 'dramatic changes in the soil and understory vegetation' (Watson 2011). This is no mutual sharing, no idealistic commons; Dodder-laurel can make life hard for some bushes and trees. However, like other local hemiparasites such as Mistletoe and Cherry Ballart, it doesn't take from its hosts in an unrestrained manner, but is equipped to coordinate water and nutrient needs with its hosts. Research on Dodder-laurel's non-biological twin Cuscata species suggests that its attachments are not arbitrary, but chosen (In Defense of Plants 2015). It can sense plants nearby and through its feeler can detect whether the plant has sufficient nutrients to act as a worthwhile host. Dodder chooses only connections that matter, ones that have an impact (Leiff 2014).

The Western notion of the parasite as bad has focused scientific research (what little there is), and popular reactions, on identifying the effects (assumed detrimental) of the parasite on the host. Birds, forest ecology and Indigenous people have a different story to tell. Mistletoe, and the other local hemiparasites, Cherry Ballart and Dodder-laurel, produce tasty edible fruits. The small sweet swellings of the Cherry Ballart, the green fragrant berries of the Dodder-laurel and the red fruits of Mistletoe highlight the alchemy of things—how one set of hemiparasitic plants can convert and transform the energy of gum trees and shrubs into sweet edible delights for humans, birds and animals. The two plants (host and parasite) together make something that neither could do alone. Indigenous Australians use Mistletoe as a food source and use the leaves for traditional remedies (Watson 2011). The name 'snotty gobble' for Dodder-laurel derives from the mucus-like feel of the berries in the mouth.

Dodder befuddles the beginnings and ends of things, instead entwining unlike species in a facilitative meshwork. Dodder, like other hemiparasites, has an order of its own and knows its place in the forest. It re/assembles bush life in a different manner and makes its own belongings. It lives by a different imperative and rhythm than the surrounding plants, and at the same time, it joins with those plants as an integral part of bush life. Dodder-laurel shows the possibilities of other ways of life, other ways of making worlds.

Disruptive agencies

Indigenous people know about parasitic plants in this region. As Dja Dja Wurrung elder Auntie Julie McHale says, 'we see this [Cherry Ballart] as a sacred tree, or sacred leaves, because the little tree has to attach to a big tree. It's like children have to be taught, or helped, or looked after by adults. It represents community in that you've got to work together' (ABC 2020). At the beginning of Auntie Julie's plant and cooking course, participants take part in a traditional Aboriginal smoking ceremony. Three plants are individually placed on the fire to create smoke and meaning. Participants take off their shoes to attach themselves more fully to the earth and move closer to the fire to scoop smoke across their bodies in a performance of cleansing and connection. The last plant added to the fire is Cherry Ballart. It is placed on the fire to signal co-operation.[3] It is in that smoky moment by the fire that settler understandings of the bush are upended and a completely different understanding offers itself. It is a moment of radical disarticulation after which things can never be the same again.

The Dja Dja Wurrung people categorise parasites like Cherry Ballart along different lines to Western thinking; they see community where settlers see encumbrance. Classification is always within a system of thought, a way of being, a way of thinking, that not only labels difference, but also makes difference at the same time. Classification is not passive, but an active event of shaping the world one way and not another (Bowker and Star 2000). Classification does not merely describe what is 'out there,' but, as Bowker and Star note, 'Each standard and each category valorizes some point of view and silences another.' 'Classifications are powerful technologies. Embedded in working infrastructures they become relatively invisible without losing any of that power' (2000, 5, 319).

The classificatory force of the term 'parasite' is part of a cultural mindset that functions as a sort of 'plant blindness' where plants are 'seen' and related to through a Western cultural lens. Local plant parasites bring a queer sensibility to critical plants studies by disrupting the normative notion of a plant as a discrete entity with roots, leaves and branches. Planty parasites 'queery' what is a 'proper' and desirable plant, they 'queery' what sort of planty bodies matter and which ones deserve attention and care. They disrupt notions of the individual entity and insist on a more collectivist notion reminding us that what constitutes a plant is always situated in broader ecological and historical contexts. The multiplicity and boundary-blurring of the queer performativity of parasites is echoed in Rebecca Giggs's exploration of whale parasites. Whalesuckers, whale worms, whale lice are so entangled with the whale itself that she suggests that the whale body could be seen as an incubator or a zoo. Giggs wonders at the dependency of parasites, a group of beings that are not independent entities and that appear to live counter to the ideal of the harmony of nature. The whale body as multiple, she says, 'housed many different ways of being alive, which might have been somewhat magical, if it weren't also so spooky. If we could learn from the parasites that everything is *not* quite itself, and it never was—that there is deathliness and irascible vigour, and plurality and plunder, pushing and pulsing within each creature—then we might undo the charms of charisma and expand the boundaries of our care' (2000, 305). As Haraway states, 'no species is ever One; to be a species is to be constitutively a crowd, in symbiogenetic naturecultures, with no stopping point. [...] species is about the dance linking kin and kind' (2016, xxiii).

For Eve Sedgwick, the 'word "queer" means *across*,' in the sense of traversing, twisting, eddying, recurring and multiply transitive (1993, xii). As well, it can refer to 'the open mesh of possibilities, gaps, overlaps, dissonances and resonances, lapses and excesses of meaning' (8). In a sense Dodder-laurel materializes this notion of across-ness with its joining of multiple species and twisting, traversing habits. The connections it makes refuse the ideal of the independent plant body and unsettle the conventional script of the host and parasite as separate and as morally and biologically in opposition.

The performative quality of 'queer' is useful also in understanding human-nature interactions as embodied articulations. The queer possibilities of the bush offer a non-nostalgic encounter of being simultaneously in-place and out-of-place in Australian nature. Queer, understood as the 'multiple criss-crossing of definitional lines' can thus be brought to bear in the postcolonial landscape to do 'a new kind of justice to the fractal intricacies of language, skin, migration, state' (Sedgwick 1993, 9). Queer theorists understand all too well the complex and interwoven implications of definitions of natural/unnatural for survival, identity, and belonging. Seymour argues that 'the environment can function as a site not just for *establishing* such constructs [of race, class, nation and gender] but for *challenging* them' (2013, 2, emphasis in original).

What happens when hemiparasites shrug off the negative baggage of the parasite as freeloader? What happens when such plants are instead materialised as part of a facilitative or coordinating network, as plants that are nurtured and given existence through the generosity and assistance of other plants? What happens when a community level relational perspective replaces a focus on the individual in isolation? What happens when consumption is refigured as non-destructive? Not the arrow with only one direction, not the abuse value of a relation without exchange, no more baddies and goodies, no more nice and nasty, no more host and hanger-on (Wolfe 2007). As Paxson advises (in relation to microbes), it is problematic to make any absolute distinctions between 'good' and 'bad,' instead, she argues, we should evaluate our companion species on the basis of 'situated effects and contingent actions' (Paxson [2014] in Kirksey 2019, 208).

Queer(y)ing the category of plant parasites re-worlds our locality—plants, humans, animals, others. Our local bush is now a stranger, more interesting, more differentiated companion. Queer worldling (Haraway 2008) offers a strategy to reconceptualise our relationship with nature beyond dualism and the received settler-colonial script. Both Indigenous understandings and queer performativity offer pathways for finding respectful ways of relating to, and seeking modes of reciprocity with, all plants, but especially parasitic plants such as dodder.

These perspectives and the experience of meeting dodder have taught us to slow down and pay attention in new ways. Rather than reacting negatively to our local plant parasites we feel enriched by our encounters with them. Their difference to the usual arboreal tale of the forest and their strategies of mimicry, of forging a life without roots, add diversity and different life-stories. Like them we feel differently attached in this place, where we belong and don't belong at the same time.

Holding Hands in quiet resistance

> The mistletoe speaks to them as they walk the bush path. The mistletoe, its shrubby top and pendulous weeping branches below, remind them of the back of a head of long hair, round at the top and cascading down in long tresses that sway in the breeze. They imagine the host tree waking in the morning and shaking out its many green leafy heads-of-hair as it prepares for the day. It rumours of vectors of movement, modes of attachment, strategies for settling in a place, finding ways of enriching it, co-becoming with the host trees and the forest community. The mistletoe appreciates their admiring glances (Instone 2018).

Figure 4: Holding Hands (2018). (Image courtesy of the artist)

The photograph *Holding Hands* has multiple narratives. The main protagonists in the image are two Indian men centrally positioned in the composition holding hands in the Australian bush and looking directly out of the picture plane at the viewer/camera. Holding hands can be seen as a gesture of love and desire; two hands coming together to confirm unity and connectedness. This clasping gesture is what it is, literally—but is also elusive and complex conceptually. This gesture has clearly been staged for the camera. So, in this context the clasping of hands certainly implies a form of community and solidarity, and even a form of quiet resistance.

The image should be plausible—yet it remains strange, as strange as images of early white settlers who attempted to bring (impose) Englishness, through dress codes and other socio-political behaviours and cultural attitudes to the Australian landscape, problematising further the Australian bush as a contested space. The area where this photograph was taken continues to be a predominantly white, Anglo-Saxon community. There is little contemporary evidence of brown bodies in the landscape. Perhaps in this context, thinking optimistically, the image signals

opportunities for cohabitation and shared narratives between new migrants and the land, and between migrants, settler and Indigenous communities.

The Australian landscape and its inhabitants, both Indigenous and white settler, is documented in art and history, if in a somewhat chequered way. What this image attempts to do is bring another discourse into the space of the Australian bush—that of the contemporary Asian Australian migrant. Not as mimicry, but rather attempting to acknowledge their presence and validating their sense of belonging on their own terms, in their own dress codes and body language thereby resisting and challenging the logic and boundaries of Asian Australian identity politics, highlighting the 'resilience and endurance of Asian Australian identities and their enormous contribution in the national imaginary-space to tell the "Australian" story…' (Chakraborty & Pieris 2019, 5).

Holding Hands reminds us that migrants bring their own knowledges, cuisines and botanical relations to the table, further 'queering' the received conventions of setter colonial society. Encounters between Indigenous Australians and non-white Australians predate white invasion. Most notable was the trade relationships in northern Australia between the indigenous Yolngu people and the seafaring Makassans of Sulawesi. A web of trading links between Darwin and the Torres Strait Islands with Indonesia and China disrupts the narrative of Australia as an isolated country, 'discovered' by the British (Marks 2018). Stephenson (2001, 2003) argues that Indigenous and migrant histories, issues and narratives are partitioned in Australia. She argues that Aboriginal and Asian-Australian literary, cultural and in our case, plant and food interactions, play 'an important role in "unearthing" the experiences of these communities themselves, highlighting the tensions and points of solidarity between them' (2001, 55). Through such alliances, Indigenous and Asian Australians can 'situate themselves and their knowledges in Australia, undermine white stereotypes, define themselves in their own terms, and empower their families and communities more generally' (56). Stephenson calls for 'a new national script that promotes greater understanding of the incorporation of migrants within, rather than after the history of relations between Indigenous and non-Indigenous peoples,' in order to unleash 'the emancipatory potential of such alliances' (2003, 64).[4] Such a new national imaginary highlights the possibilities of creating new stories outside the white settler-colonial script.

As critical in the photograph is the backdrop of the Australian bush. Here indigenous plants, Grey Box eucalyptus and hemiparasitic Box Mistletoe coalesce, while introduced Blackberry forms an understory, framing the two protagonists, while the two protagonists also set the bush into new relief. The discourse around hemiparasites sheds light on the relationship of the Mistletoe and Dodder-laurel, and indeed on parasitic forms, which are often perceived as dangerous and negative, but which in fact challenge these assumptions asking us to consider instead the hospitality of provision and a shared sense of community and belonging. Furthermore, it sets up a conversation between different cultural forms—the Indian men (brown bodies) and Australian bush bits (green bodies)—both becoming differently and mutually constituting the space of inbetweenness.

Holding Hands puts queer green and brown bodies into conversation. Both the plants—Mistletoe and Blackberry—and the humans refuse the dominant settler narrative of normal/natural. They riff on the expressions of weeding out, invasive, colonising, unwanted, and other terms used to denigrate one group against another. The parasite and the invasive plant disrupt the 'native nature' narrative rooted in the 1788 Australian origin tale, and the queer brown bodies point out that the 'human' in human-plant studies is multiple and differentiated, not the white, male, heteronormative body of settler discourse. The plants embrace and surround the brown bodies welcoming them and drawing them into a becoming that gestures at possibilities beyond the usual subject/object, foreground/background delineations. The Mistletoe and Blackberry speak about the tensions, struggles, desires and pleasures of what it means to belong. By questioning who and what belongs they challenge us to understand that belonging is not just about humans, but that the things we often think of as background, like plants and place, are active participants in what it is to belong. A kind of *belonging-with*. And at the same time, belonging makes things, makes us, makes communities and this place; it's active, relational, messy, affective and always emergent, never complete. It's a kind of non-kin coupling that 'foreground[s] a desire that is flagrantly wayward and composing a deterritorialising rhizome, instead of a declaration of loyalty to family roots' (Chisholm 2010, 380). Such a desire to forge non-kin couplings beyond the colonial inheritance of white settler Australia draws the two figures and their plant companions into performing an alternate tale of human/nonhuman active subjects making place differently. 'It is precisely queer desire,' notes Mortimer-Sandilands and Erickson, 'that creates the experimental, co-adaptive, symbiotic, and non reproductive interspecies couplings that become evolution' (2010, 39). The meeting of hands, the meeting of species, the meeting of native and non-native, the meeting of host and parasite, put at stake the question of how to inherit histories and how to get on together between and across species (Haraway 2008, 35).

Historically, the figure of the parasite has been a marker of society's willingness to accept or reject otherness. Rather than describing a natural phenomenon of the nonhuman world, the concept of parasite was originally a social one, applied to people living off the hospitality of others (Gullestad 2012). Only later was it used in relation to plants, and later still in relation to animals and insects. The moral opprobrium of the original social concept influenced biologists to characterise plant parasites as 'infecting' the host, as damaging, unwanted pests open to elimination. The hidden power of categorisation also skewed scientific research toward studying the presumed negative effects of the parasite on the host, seeing host and parasite as separate rather than mutually constitutive. As a disrupter of the existing order, parasites provoke change along transverse lines, modifying both host and parasite to produce new (re)configurations. As Michel Serres notes: 'The parasite is an exciter. Far from transforming a system, changing its nature, its form, its elements, its relations and its pathways the parasite makes it change states differentially. It inclines it. It makes the equilibrium of the energetic distribution fluctuate. It dopes it. It irritates it. It inflames it. Often this inclination has no effect. But it can produce gigantic ones by chain reactions or reproduction' (2007,191). Far from being unnatural participants, pests or invaders, biologists now think about parasites as keystone species enhancing biodiversity, and as motors of evolution driving the continual renewal of life (Watson 2009). Gullestad notes that 'scientists have for example come to the conclusion that a lack of parasites should not be understood as a sign of

health, but rather the opposite, pointing to a world out of balance. They have also stressed that being a successful parasite in fact involves a very high degree of specialization, as well as the ability to constantly modify your behaviour in order to adapt to an ever-changing habitat bent on your destruction' (2012).

The word parasite is derived from the Greek 'parasitos' meaning 'one who eats at the table of another.' The parasite might be an unwelcome guest, but it might also be a companion species in Haraway's terms of 'messmates at the table, breaking bread', queer kin together eating and being eaten, living and dying, comrades together (2008, 17 & 322). From a queer worlding perspective the local parasites find their place alongside other bush beings as vital, respected and necessary companions, collectively dining at the table forging a generous hospitality of provision.

Not a conclusion, but an opening

> Whether grasped two-by-two or tangle-by-tangle, attachment sites needed for meeting species redo everything they touch. The point is not to celebrate complexity but to become worldly and to respond (Haraway 2008, 41).

Living on the unceded lands of the Dja Dja Wurrung people is a privilege. Walking in this landscape has taught us much, revealing itself seasonally and making us attentive to the richness this place offers. Plant parasite agencies did indeed alert our curiosity and eventually ensnared us in their unfolding narratives, exposing how art and plants became intrinsically linked as we worked through collaborative processes of making, writing and reflecting. Our experiments with hemiparasites gave us permission to allow the writing to wander through and incorporate (a bit like the tendrils of dodder), dream state narratives and creative practice methods as legitimate ways of exploring meaning and our becoming-with place.

Our creative engagement with local hemiparasites, especially Dodder-laurel and Mistletoe, and our growing appreciation of Indigenous plant knowledges have moved and changed us in multiple ways, disrupting the order of things. The Dja Dja Wurrung offered a different way of understanding plant-plant and human-plant relations and exposed the particularity of Western botany and its classificatory apparatus. Parasites raised the question of who or what belongs. Dodder-laurel shared with us its own order, re/assembling bush life in a different manner to make its own belongings, while mistletoe opened up a different potentiality by demonstrating the hospitality of provision and re/distribution.

A queer perspective opened a field of possibilities of relations other than the Western plant parasite worthy/wicked dualism. The task of queer politics, says Elizabeth Grosz, is to 'embrace the openness, to welcome unknown readings, new claims, provocative analyses—to make things happen, to shift fixed positions, to transform our everyday expectations and habitual schemas' (1995, 174 in Mortimer-Sandilands and Erikson 2010, 37). Queer love, argues Kirksey, promotes a more complex form that disrupts the conventional notions of love, desire and empathy. 'Endosymbiotic love,' he says, 'involves ensembles of selves—associations of entangled agents

involved in relations of reciprocity and accountability, assemblages that can generate feelings of empathy and desire' (2019, 207). Pushing Kirksey's terms beyond the microbial, we could reframe our ongoing relationship with dodder as another variety of a queer 'interspecies love' story. It also makes us reconsider our love of this place beyond our anthropocentric notions and to embrace complex and 'more distant forms of affection' (200) that decentre the human.

These insights along with our embodied and experimental approach have given us an intensified awareness of the aliveness and variability of the local bush. The bush is no longer just a setting for our lives, but a queer presence making its own world in its own particular style. Dodder-laurel and the other hemiparasites have taught us to 'see' the forest anew. They have taught us to look more closely, to pay attention to the small things, and to be aware of the relations between things.

Now when we drive into town, we think about the clasp of the Dodder-laurel's tendrils as they choose us, ensnare us, and how dodder has utterly rearranged our trajectory. Planty parasites underlined the value of 'risky attachments' which 'are not so much about danger, but about possibility; the possibilities that emerge from acknowledging our entanglements in and with things. […] But more than this, is the act of risking attachment, the active search for different and interconnected practices of feeling, thought, and action' (Instone 2015, 29–30). But of course, the intentions and trajectories of dodder remain necessarily limited from our point of view: we can only be moved and continue to be moved not as an end point but rather as an opening to more enlivened and entangled possibilities. Our responses may vary in accordance with our different colonial and migrant inheritances, but we share a new openness through which to become-with this place in a more respectful and accountable manner.

Notes

[1] Parasitic plants obtain all or part of their nutritional requirements from another (host) plant. They attach to stems or roots of the host through a specialised structure called the haustorium. All three local parasites—Cherry ballart (*Exocarpus cupressiformus)*, Dodder-laurel (*Cassytha melantha*), Mistletoe (*Amyema miquelii)*—contain chlorophyll and have some ability to photosynthesise to varying extents, hence they are classified as hemiparasites, although dodder is sometimes characterised as intermediate between a hemi and holoparasite. Cherry Ballart is a root parasite while Dodder-laurel and Mistletoe attach to stems. Hemiparasitism is a particular type of symbiotic relation between two species (different from commensalism and mutualism) where one plant benefits and the other suffers some level of detriment.

[2] The project Becoming Differently (2018) comprised four elements. In this paper, we focus on three works: a photograph (Holding Hands), an installation (An Indian Spice table/dodder vine/haustorium/the dead hair of a cultural geographer/unidentified bird nests/collapsing form/eucalyptus branch/Swarovski crystals) and an essay (Entangled). Becoming Differently was exhibited at The Substation, Newport, March 23–April 21, 2018, for the exhibition *Hyphenated* (2018), curated by Phuong Ngo and Tammy Wong Hulbert.

[3] The Wadawurrung (southern Victoria) also use Cherry Ballart in 'welcome to country' ceremonies. This gesture 'is a beautiful metaphor for visitors to Country who are being invited to share the resources of the land while caring for it as if it was their own. It is also a reminder of the importance of cooperation between people if all are to prosper' (Murphy 2021).

[4] A recent collaboration between a Chinese restaurant in New South Wales and a First Nations cultural education centre and land management service, Currie Country, is moving toward breaking down the dichotomy between

Indigenous peoples and Asian Australians. Together they are finding ways to share cultural knowledges through the production of food, highlighting the shared connections between Indigenous and Asian communities. Renee Ng, whose parents own the restaurant, says; 'There's definitely potential to continue telling this story that includes everyone. Everyone is involved in creating this story of our future together.' Arabella Douglas of Currie Country adds, 'It's all about everyone having a taste of what can be reimagined.' Both Douglas and Ng 'want their initiative to celebrate the historic Indigenous connections between Chinese, Indian and South Sea Islander communities in Australia.' 'The real story of Australia doesn't start in 1788,' Douglas says. 'We've got to stop seeing each other through a white perspective' (Lee 2021).

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Biographies

Down the Road Projects (DtRP) is a collaborative duo consisting of an artist and a cultural geographer who live and work on the edge of the Castlemaine Diggings National Heritage Park in central Victoria, Australia on unceded Dja Dja Wurrung country. Our research projects are pan-disciplinary and revolve around issues of place, identity, belonging and becoming.

Dr Lesley Instone is a cultural geographer whose work explores the material and embodied encounters and entanglements of humans and nonhumans in (mostly) Australian settler colonised lands. Her research experiments with different ways of paying attention and engaging performatively in the world and draws on a richly diverse theoretical landscape including science studies, feminism, postcolonialism, and more-than-human geographies. She has a particular interest in how affect, encounter and contingency shape relations, identities and worlds.

Rhett D'Costa was born in India and immigrated to Australia as a child with his family. His experiences as an Asian Australian inform his pan disciplinary art practice and research, from the use of colour to complex expressions of identity and belonging. These interests take into account shifting social and political circumstances and the tensions and consequences of mobility and migration in diverse environments. Rhett's artistic research examines the agency and role an artist as researcher can have within these often precarious and unstable spaces. In a career spanning thirty years in art practice and tertiary art education, his particular focus has centred around the Asia-Pacific region.

PERFORMANCE
PHILOSOPHY

PLANT ART FROM THE AMAZON: TREE PERFORMANCE IN THE WORK OF FRANS KRAJCBERG

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The Life of Wood

In a documentary about his work, Polish born, Brazilian naturalized artist Frans Krajcberg (1921–2017) says that, over the course of his creative development, he "discovered matter" and found that he "can work with it, with nature, not be afraid of it, participate with it" (Salles 1986).[1] The movie *Krajcberg: The Poet of Traces*[2] by Walter Salles, a renowned Brazilian filmmaker, accompanies the artist as he travels to the Amazon River Basin and other wooded areas to document the rampant deforestation taking place in Brazil and to gather local materials that would become the building-blocs of his art. Moving beyond artworks *about* the natural world, Krajcberg created *together with* natural elements. His goal was not to represent nature as an object to be contemplated by the human sensorial apparatus, mediated by artistic skill. He wished to "feel matter"; to use it not simply as raw material, but to collaborate with it, or, as the voice over in Salles's film puts it, "for the first time, an artist was working in co-authorship with nature." He "introduced [...] the idea of the creativity of nature itself" (Walters 1999, 244) and, together with the natural world, shaped pieces that both pay homage to it and denounce environmental destruction.

Plants are central to Krajcberg's artistic praxis. Considered to be one of the founding figures of Earth Art in Brazil and internationally (McNee 2014, 100), Krajcberg used materials borrowed from nature for most of his career. He received artist training in Germany and Paris in the aftermath of the Second World War, adopting an expressionist painting style. After moving to Brazil in 1947, he started to experiment with found materials and natural forms, including natural pigments,

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minerals and plants.[3] In this article, I will focus on Krajcberg's work from the 1980s onwards, when he began to employ charred tree trunks he collected in the aftermath of the devastating forest fires that destroy Brazil's old-growth tropical forests to make his sculptures (see Fig. 1).[4] Most of these fires are human-induced and are used as a means to clear land for agricultural purposes, a process that has been going on since the beginning of the colonizing period, but which has greatly intensified from the middle of past century onwards. Krajcberg mourned the loss of the Atlantic rainforest he witnessed first-hand. His house and studio were located in the southern part of the Brazilian state of Bahia, in what used to be a densely forested area that has been all but decimated through fire. Scientists had predicted it would take 80 years for the rainforest to disappear, but it was gone during the artist's lifetime, in just 40 years. Based upon this grim precedent, "you can imagine," Krajcberg tells viewers in Salles's documentary, "how our Amazon will be destroyed." "It became unbearable here, [...] there is nothing here anymore," he reflets sadly as he faces his interlocutor (Salles 1986). "What can I do about this?" is the implicit question he leaves open in the documentary and that he tries to answer through his art.

In the face of the massive devastation of rainforests, Krajcberg sought to express his indignation for the plants' pervasive mistreatment at the hands of humans, who adapted exploitative colonial practices to our neo-colonial, neo-liberal age. "The ferocity of the colonizer in Brazil is exactly the same after 500 years—cutting down the forests—[...] though today they [those who act in ways similar to the former colonizers] call themselves technicians" (quoted in McNee 2014, 108), the artist told the Brazilian Chamber of Deputies in 1976, in a clear indictment of the then-governing military dictatorship's lax environmental protection policies. Krajcberg wondered "how to make a sculpture scream as if it had a voice" (quoted in Walters 1999, 208), "how to make a piece of charcoal scream" (quoted in Collontonio and Cravo 2005, 44) and articulate their condemnation of a Western-style economy predicated on the depletion of natural resources in one area after the other. His solution was to bring together sculpture and charcoal, art and its material substratum, which he unites in an inextricable network of meaning that goes beyond mere artistic display.

In his artworks, Krajcberg links art and environmental activism. "I want to show the destruction, my revulsion [at the destruction of the natural world]," he says, "and at the same time to make my art" (Krajcberg, quoted in Walters 1999, 119). His charred wood sculptures occupy a zone of indistinction between aesthetics and political denunciation, and he openly acknowledges that "my goal is not to make sculptures, my goal is to lend a shape to my scream" (Russo 2009, 21). To underline his environmental activism, Krajcberg frequently said that he was unconcerned about whether or not his pieces were deemed to be artworks (Walters 1999, 209), often going as far as stating that he no longer considered his sculptures to be art (McNee 2016, 101). Parallel to his obvious dedication to the environmental cause, I would argue that there is another underlying reason for Krajcberg's reluctance, in the final decades of his life, to define himself as an artist in the traditional sense of the word. His incinerated wood pieces blur the boundaries not only between art and activism, but also between the artist and his object, between human and non-human works. As he mentions in Salles's documentary, "I like to touch a flower, or to almost talk to a tree" (1986). His art is the result of this ongoing sensorial but also intellectual exchange with plants.

Figure 1: Révolte*. Natural pigment over trunks.* Frans Krajcberg: Un artiste en résistance*, 2017.*

For Krajcberg, "art is life" and he wishes to "give continuity to life, the life of the forest" through his artworks (Walters 1999, 119). Yet, he picked the dead bodies of trees to create his sculptures. Does this choice not betray an inherent contradiction in his artworks? The artist's work with calcinated wood might, at first blush, point to a somewhat naïve belief in the redemptive power of art that would offer incinerated plants a resurrection, a second, superior life in the realm of human culture. After all, German philosopher Friedrich Hegel defended in his influential *Phenomenology of Spirit* (1807) that a tree or any other natural element achieves a higher existence once it has been touched by human spirit,[5] which means, in the case of a tree, once it has been cut down and turned

into a table, a chair or, better still, into pieces of paper onto which humans can write philosophical treatises or into artworks that tingle the human senses and mind.

Krajcberg's incinerated wood sculptures cannot, I would contend, be reduced to a human hubristic attempt to instill life into dead plants through the power of art. Nor can they simply be interpreted as means to counterbalance the rampant destruction of forests by preserving at least some of the remnants of the incinerated trees as artworks. When Krajcberg mentions his aspiration that the life of the forest continues in his pieces, he must be understood quite literally as referring to the forms in which charred wood carries life. The artist states that "it [wood] conveys warmth. It seems like it is conveying the warmth that existed when it was alive. That is extremely important to me. I like to feel that [...] the warmth of matter" (Salles 1986). Significantly, in ancient Greek, the words for forest or "wooded area" and matter were the same, namely "hyle." For Krajcberg, wood is capable of expression, in the same way as plants articulate themselves and establish meaningful relations with their surroundings.

Krajcberg is certainly not making a case for regarding plants living in healthy forest, such as old-growth trees from the Amazon, as strictly equal to the incinerated pieces of wood he salvages in the aftermath of forest fires. Such a line of thought would mean, in a *reductio ad absurdum* line of argumentation, that humans have a free ticket to, in good conscience, burn down all remaining forests, given that incinerated wood has a life akin to that of trees. The value Krajcberg places on his work with wood does mean, however, that he calls into question not only the separation between human and non-human art and activism, but also the strict divide between living and non-living matter. Though different from a plant, wood has a life of its own. It can convey meaning and, similar to a tree in a forest, be part of a complex web of signification.

To be clear, Krajcberg's sculptures stand for a strong indictment of the burning of rainforests and of the destruction of animals and plants for the sake of short-sighted economic gain.[6] They are a visually impactful condemnation of the loss of the myriad forms of life that this devastation represents. But they also acknowledge that, even after their death, the bodies of plants have agency. The pieces of charred wood used in his sculptures enact a performance, advocating through the exhibition of their injured bodies for the lives of the trees they used to be. It is as if there is a memory to matter and the corporeality of the incinerated wood brings back the image of the living plant and speaks for the trees' right to remain alive. Krajcberg's artworks, therefore, strive to give each being their due and to do justice to the different forms of existence of plants, including in their afterlife as wood.

Krajcberg often states that, with such richness in nature, he, as an artist, can only hope to approximate it (Salles 1986). Following this train of thought, the ideal artwork would be one that exists in symbiosis with the natural world, to a point where art and nature become indistinguishable. This was perhaps what Krajcberg strove to accomplish when he drew extensively on natural elements—natural pigments, parts of mangroves, vines and trees, etc.—to emulate their elegance and bring the equilibrium of natural life into his art. But in the context of widespread destruction of the natural world, it would have been shortsighted to continue producing artworks

based on the assumption of a pristine nature. The artist therefore started to bring the damaged life he found in the natural environment into his art. With his charred wood sculptures, he persists in his efforts to come close to nature. But his pieces now speak of the ravaged natural world of the Anthropocene, where rainforests have been burnt to the ground and centuries-old trees have been turned into calcinated wood. From a celebration of forests, Krajcberg's art becomes a cry of revolt against the destruction of plant life. His burnt wood sculptures, lying at the intersection of life and death, allow matter to speak out for the preservation of life.

In what follows, I examine the notions of language, signification and volition that allow us to reflect upon Krajcberg's sculptures and their denunciation of the destruction of Brazilian rainforests. My analysis goes back to recent studies in the field of plant signaling and behavior that show the ability of plants to perform activities we previously ascribed only to animals. The fact that plants can feel, communicate, think, have memory, and so on, has been shown in a variety of scientific studies (see, for instance, Calvo 2016) and popularized in books including Daniel Chamovitz's *What a Plant Knows* (2012), Anthony Trewavas's *Plant Behavior and Intelligence* (2014), Peter Wohlleben's *The Hidden Life of Trees* (2015), Stephano Mancuso's *The Revolutionary Genius of Plants* (2017), among many others.

Taking this growing body of literature on plant articulation as a point of departure, several questions about the possibility of plant performance and expression in collaboration with humans remain. Can plants communicate with *Homo sapiens*? If so, what is it that they want to say? What about matter, such as wood? Is its able to express itself? What is the difference between the language of a living plant and that of a piece of wood? In order to address these issues, I will turn to three theoretical frameworks for understanding the articulation of flora and, more broadly, of living and non-living matter: semiotics, so-called "New Materialism," and Indigenous thought from the Amazon. Semiotics, closely linked to linguistics and to the philosophy of language, dates back to the nineteenth century. The existence of non-human forms of language was already contemplated in the work of its founder, Charles Peirce and, especially from the second half of the twentieth century onwards, several semiotic studies argue for the possibility of signification in non-humans and even in non-living beings.

There is a conceptual continuity between semiotics and the work of some authors affiliated with New Materialism, an umbrella term encompassing the writings of a variety of thinkers who, starting in the last decade of the past century, have sought to foreground the agentic capacity of matter to determine both life processes and the becoming of inert substances, as well as to question the divide between the two. Despite variations across communities, Indigenous, peasant and riverine thought from the different Amazon regions also shares a belief in the meaning-making ability of non-human living and non-living entities that shape human life and behavior. Anthropologists agree that, for Amazonian peoples, there is but a tenuous, porous demarcation separating humans and non-humans, and the move between the two realms results in a process of learning for both sides. In the following sections of this article, then, I will assess what the insights from these three loosely related frameworks can contribute to the understanding of vegetal forms of expression in Krajcberg's artworks.

In the final section of the essay, and in light of recent semiotics and new materialist theory, as well as of insights from Amazon Indigenous thought, I examine the parameters for collaboration between human and non-human beings in Krajcberg's sculptures. I begin by considering the relevance of the Amazon River Basin for the artist's reflections on the role of art in contemporary society. Subsequently, I examine one of his Amazonian charred wood sculptures more in-depth, namely, "Homage to Chico Mendes," shown in the 1992 Rio de Janeiro Museum of Modern Art exhibition titled *Frans Krajcberg: Images of Fire* as part of the cultural program accompanying the UN Conference on Environment and Development, also known as Earth Summit, that happened in the city on the same year.

Biosemiotics and Plant Signification

American philosopher Charles Sanders Pierce famously wrote that "this universe is perfused with signs, if it is not composed exclusively of signs" (quoted in Deely 1990, 84). He realized that organisms navigate their environment by interpreting it, which led him "to the view that 'mind' and 'ideas' are not properties of humans alone, but are immanent in all living things" (Wheeler 2011, 272). Pierce's insights into a generalized theory of meaning that would encompass all living beings were deepened in the second half of the past century. The research undertaken by Thomas A. Sebeok into animal forms of communication widened the purview of semiotics beyond humanity and prompted him to coin the term "zoosemiotics" in 1963 (Favareau 2010, 258).

Less than two decades later, Martin Krampen wrote his essay "Phytosemiotics" (1981), where he postulated that plants, too, are able to produce and interpret signs. Heavily influenced by the work of biologist Jacob von Uexküll, Krampen argues that, even though plants have no central nervous system, they can process so-called "meaning factors," or stimuli, which they decipher and respond to (Krampen 2010, 269). Biologically very different from humans and other animals, plants use the means at their disposal to make sense of their surroundings—or, in von Uexküll's words, their *Umwelt*, which is literally translated into English as "world around"—and to shape their lives based upon their interpretation of outward signs. Krampen's work suggests that environments such as the ones Krajcberg struggles to defend through his activism form vast semiotic networks involving, beyond their human and other animal inhabitants, the plants that make up the complexity of rainforest life.

In his essay, Krampen emphasizes the foundational importance of plants for human life and culture, given that they produce all the oxygen non-human and human animals breathe (271). A corollary of Krampen's argumentation, highlighted in Krajcberg's artworks, is that, by burning oxygen-producing rainforests such as the Amazon, humans are undermining their own possibilities of meaning-making. "Despite the impression of progress," Krampen writes, "the human organism [...] remains locked together with plants by a mutual rule of correspondence: If men cease to care for plants [...] they will asphyxiate themselves" (276). Krajcberg's artistic collaboration with plants reveals not only that vegetal life is able to produce meaning, but also draws our attention to the symbiotic relationship between humans and flora that cuts across all levels of human existence, a balance that is being thrown off-kilter by the relentless exploitation of

plants. Through Krajcberg's artworks, viewers become aware of the role plants play as, in Krampen's words, "teachers" and as "living examples" of "passive resistance" (275). The display of charred wood in the artist's sculptures bespeaks the silent, non-violent resistance of flora against the fires decimating rainforests.

Sebeok's and, later, Krampen's work on non-human semiotics is the foundation for the discipline of biosemiotics,[7] "an interdisciplinary scientific project that is based on the recognition that life is fundamentally grounded in semiotic processes" (Hoffmeyer, quoted in Kull et al. 2011, 15).[8] Biosemiotics sees a continuity between meaning-making in humans and in non-human beings.[9] Its implication for the study of human cultural productions is, as Timo Maran points out, a widening of "the sphere of semiotic processes to embrace all living organisms on Earth" (2014, 262). For Maran, "human culture should be considered as being surrounded by a multitude of other semiotic systems, some partly accessible, some rather different from ours" (262). Biosemiotics, therefore, clears the path for examining sign relations between humans and non-human semiotic subjects (ibid.). We can understand Krajcberg's incinerated wood sculptures through a biosemiotics lens as an inter-species collaboration that cuts across the signifying potential of both humans and plants.

While the project of biosemiotics offers a possible theoretical framework for understanding Krajcberg's works as human/plant creations, it has, in my view, two significant shortcomings. First, and in spite of its proponents' claims that it is an all-encompassing theory of meaning embracing the totality of living beings, biosemiotics often involves a hierarchical view of organisms, an understanding of nature as a ladder—the Medieval *scala naturae*, or Great Chain of Being—that descends from God, through humans, to animals, then plants and so on. This pyramidal take on the world, according to which "higher" forms of existence are above and "lower" ones further down the ladder, was the cause for regarding plants and/or animals as incapable of producing and interpreting meaning in the first place.

Biosemiotics' hierarchy of meaning-making beings goes back to Pierce's distinction between symbols that depend on convention and are characteristic of human linguistic communication, icons, which function based upon a resemblance between two terms, and indexes that hinge upon a physical or spatial relation (265–66). In his essay on "Phytosemiosis," Krampen implies that plants are only capable of the "lowest" meaning-making, while humans alone have access to higher forms of signification.[10] This structured vision of life precludes a true collaborative endeavor between humans and plants, such as we find in Krajcberg's sculptures.

Another limitation of biosemiotics is that it establishes a stark differentiation between living and non-living beings. As Maran succinctly puts it, "instead of talking about the opposition between the humans and the environment, the environment itself can be seen as twofold, including the physical environment as well as semiotically competent animals [and plants] who are much more similar to humans than we are to rocks or rivers" (264). "Semiosis," then "is what distinguishes all that is animate from lifeless" (Sebeok, quoted in Kull et al. 2011, 2), a statement so often repeated by Sebeok that some semioticians know it as "Sebeok's thesis." If non-living matter is completely

devoid of meaning, though, how can we interpret the signifying possibilities of incinerated wood in Krajcberg's sculptures?

Some semioticians have found in the project of biosemiotics a cue to question the strict divide between biological life and non-living matter. Donald Favareau points out that, for biosemiotician John Deely, "all the phenomena that are criterial of biological life [...] must themselves be congruent with, emerge from, and build upon the possibilities, constraints and regularities of the existing physical substratum" (2010, 260). Therefore, he continues, "the search for the non-biological regularities of the universe that alone make semiosis veridical becomes a field of (at least theoretical) investigation in its own right" (ibid.). Deely designates the discipline that examines the "regularities of the non-living surround that can potentially function as signs" as physiosemiotics (260–61). According to Deely, such a broad conception of semiotics would include "the two levels of cognitive semiosis (anthroposemiosis and zoösemiosis), and two lower levels of semiosis not dependent on cognition as such (phytosemiosis and physiosemiosis)" (1990, 83). While Deely still relies on a hierarchical view of semiotic processes, the ones he designates as cognitive deemed higher than those he regards as non-cognitive, his concept of "physiosemiotics" paves the way for considering the signification of matter. The meaning-making potential of wood in Krajcberg's sculptures could thus be interpreted from both a phytosemiotic and a physiosemiotic perspective.

New Materialism: The Agency of Matter

The main premises of bio- and physiosemiotics find an echo in recent theorizations of so-called New Materialism. This term encompasses a group of heterogenous theoretical approaches including, among others, ecological postmodernism, post-humanism, material feminism, "thing theory" and object-oriented ontology (Iovino and Oppermann 2014, 10). What unites the otherwise disparate new materialist body of writings is, as Jane Bennett succinctly puts it, the aim "to detach materiality from the figures of passive, mechanistic, or divinely infused substance" (2010, xiii).[11] New materialist thinkers share an awareness of "[t]he power of matter to build dynamics of meaning in and across bodies" (Iovino and Oppermann 2014, 4).[12] For this group of thinkers, matter is capable of semiosis and the whole world is a "material-semiotic reality" (Haraway, quoted in Iovino and Oppermann 2014, 2). As a consequence, matter has a mind of its own, or, in other words, it has agency, which "therefore, is not to be necessarily and exclusively associated with human beings and with human intentionality, but [...] is a pervasive and inbuilt property of matter, as part and parcel of its generative dynamism" (Iovino and Oppermann 2014, 3). In a nutshell: matter matters and means quite a lot more than we used to give it credit for.

New materialist thinkers highlight the co-imbrication of matter and meaning, at the same time as they espouse a non-hierarchical view of the multiple forms of existence. They recognize that different entities have diverse ways of expressing themselves, but shun the anthropocentric bias of considering human modes of articulation to be inherently superior to those of other beings. "If matter itself is lively," Bennett argues, "not only is the difference between subjects and objects minimized, but the status of the shared materiality of all things [human and non-human, living and non-living] is elevated" (2010, 13). As she points out: "Materiality is a rubric that tends to

horizontalize the relations between humans, biota, and abiota. It draws human attention sideways, away from an ontologically ranked Great Chain of Being and toward a greater appreciation of the complex entanglements of humans and nonhumans" (112). For new materialist thought, human volition and action are not considered to be exceptional phenomena; they are a knot within "a vast network of agencies" (Iovino and Oppermann 2014, 3). As Serenella Iovino and Serpil Oppermann point out, "the human agency meets the narrative agency of matter halfway, generating material-discursive phenomena in the forms of literature and other cultural creations" (9). Krajcberg's sculptures are an example of cultural productions that result from an encounter between human and non-human material agency, such as the one mentioned in the quote above.

Karen Barad's notion of agential realism exemplifies the pertinence of new materialist reflections for the discussion of Krajcberg's sculptures. Barad's project draws on quantum theory to contests both what she considers to be "the excessive power granted to [human] language to determine what is real" (2007, 133)[13] and "[t]he postulation of individually determinate entities with inherent properties," or "things," which, in her view, are the hallmark of an outdated, atomistic metaphysics (137). Instead, she turns to matter, which she understands as "productive, generated and generative" (136). According to Barad, matter is not a substance; it is a becoming: "not a thing but a doing, a congealing of agency" (151). The world—or matter—is therefore not molded by human discourse, nor is it composed of discreet beings that interact with one another. "The primary semantic units are not 'words' but material-discursive practices," writes Barad (141), and the primary ontological units are phenomena that emerge through intra-actions and constitute entangled agencies.[14] As she puts it: "in contrast to the usual 'interaction,' which assumes that there are separate individual agencies that precede their interaction, the notion of intra-action recognizes that distinct agencies do not precede, but rather emerge through, their intra-action. [...] agencies [...] don't exist as individual elements" (33).[15] For Barad, meaning results from agential intra-actions, that is to say, it inheres in phenomena that arise out of material encounters.

Barad's agential realism regards meaning as the outcome of "an ongoing performance of the world" in its materiality (149). Intelligibility is "not a human-dependent characteristic but a feature of the world in its differential becoming" (ibid.). Similarly, "knowing does not require intellection in the humanist sense, either. Rather, knowing is a matter of differential responsiveness (as performatively articulated and accountable) to what matters" (ibid.). Signification and interpretation, then, depend upon "matter(ing)," upon the "dynamic articulation/configuration of the world," which means that materiality is itself discursive (151).

For Barad, not only is matter agentic, but we also cannot think of human agency apart from the agency of matter. Human (or non-human) agency, as displayed, for instance, in a work of art, emerges as the outcome of intra-actions and is coextensive with the becoming of matter. Artworks can thus be regarded as the outcome of intra-actions, or as phenomena, the meaning of which is tied to material processes. Krajcberg's incinerated wood sculptures embody Barad's assertion that meaning-making is always the performative coalescing of matter. They make apparent that all artworks are necessarily a coming together of material forces, a collaborative agential materialist performance.

Metamorphoses and Perspectivism in Amazonian Thought

A counterpoint to New Materialism's views on the vitality of matter can be found in Indigenous, peasant and riverine Amazonian thought that foregrounds the agency of non-human beings and their impact on human lives. Native Amazonian communities consider not only fauna and flora but also, for instance, rivers or mountains, as subjects capable of intentionality and social agency. Such entities are akin to what anthropologist Marisol de la Cadena has designated, in the context of Andean culture, as earth-beings (2015), salient forms of existence from the landscape or, in the case of Amazonia, also animals and plants, with whom humans negotiate key aspects of their ongoing commerce with their surroundings.

Anthropological studies show that Amazonian communities make no rigid distinctions between humans and non-humans, and cross-species metamorphoses are a frequent trope of Amazonian culture. Indigenous worldviews presuppose that non-human beings have an outlook of their own, which they relinquish to adopt other non-human or human standpoints, or, conversely, that humans can learn to see the world through a non-human perspective. Rivers, for instance, are frequently considered to be snakes that, once angered, need to be appeased, lest humans want to suffer their wrath (see Galeano 2017). Interspecies relations are common, an example being the widespread belief throughout the region that river dolphins seduce young women, often by assuming the shape of men (see Slater 1994). Eduardo Kohn shows that, for some Amazonian communities, forests have their modes of thought and enter into dialogic exchanges with humans (2013). Speaking trees who ponder human-plant relations and bemoan the exploitation of flora are a feature of several classical Latin American novels about the Amazon, including José Eustasio Rivera's *The Vortex* (*La vorágine*, 1924) and Rómulo Gallegos's *Canaima* (1935).

The constant exchanges between different entities and the metamorphoses of various forms of being into one another in Amazonian thought echo Barad's new materialist argument about the flux of matter, which congeals into specific, meaningful configurations—or phenomena—only momentarily as part of the ongoing performance of the world. The wood in Krajcberg's sculptures exemplifies this recurrent metamorphosis of matter. Plants, who are capable of turning inorganic substances into organic life through photosynthesis, are transformed into charred wood through forest fires. That incinerated wood, in turn, enters into a collaborative exchange with the sculptor to become a work of art that, subsequently, is interpreted by viewers and readers of texts such as the present one, in an infinite chain of transmutations and (re)significations.

Anthropologist Eduardo Viveiros de Castro has theorized the recurrent metamorphoses in Amazonian cultures as part of a worldview he calls "perspectivism." He defines this term as a "conception [...] according to which the world is inhabited by different sorts of subjects or persons, human and non-human, which apprehend reality from distinct points of view" (1998, 469). Castro argues that Amazonian Indigenous groups presuppose a spiritual unity of all living beings, who share the same cultural background, the difference between humans and non-humans lying solely in their bodies. For these communities, "animals [and, I would add, plants] are people or see themselves as persons," a notion associated with the idea that "the manifest form of each species

is a mere envelope (a 'clothing') which conceals an internal human form [...]" (470–71). Non-human beings have "an intentionality or subjectivity formally identical to human consciousness, materializable, let us say, in a human bodily schema concealed behind an animal mask," the distinction being "between an anthropomorphic essence of a spiritual type [...] and a variable bodily appearance, characteristic of each individual species but which rather than being a fixed attribute is instead a changeable and removable clothing" (471). The collaboration between wood, plants and people, such as the one seen in Krajcberg's sculptures, is made possible by this common spirituality and culture shared by humans and non-humans.

According to Castro, Amazonian thought is unabashedly anthropomorphic. Amazonian anthropomorphism is grounded on the notion that humans and non-humans are equally able to create meaning and culture. Rather than erasing non-human life by willfully superimposing human features upon it, Amazonian communities believe non-human and human beings possess similar spiritual attributes. The anthropomorphism of Amazonian peoples chimes in with recent debates in the environmental humanities on anthropomorphism as a way to underline the connections between humans and other forms of existence. As Bennett points out, "in revealing similarities across categorical divides and lighting up structural parallels between material forms in 'nature' and those in 'culture,' anthropomorphism can reveal isomorphisms" (2010, 99). In the same vein, Frederik Karlsson argues for "critical anthropomorphism" as a means to move away from a mechanistic view of non-humans and to highlight the very real analogies between humans and other beings (2012). In the context of plant writing, John Ryan has similarly advocated for anthropomorphism "to prompt readers to care more about vegetal others" (2020, 103). Krajcberg's sculptures can be regarded as a form of critical anthropomorphism in that the artist and the plants contribute to the creation of a cultural artefact.

Castro considers that the anthropomorphizing of non-human entities in Amazonian Amerindian communities belongs to a mode of thought that is not multicultural but, rather, multinatural. Western multiculturalism entails the unity of human and non-human physical bodies—the Cartesian *res extensa*—governed by the same natural laws; spirit and mind—or *res cogitans*—is what generates distinctions between different human communities and between humans and non-humans. Unlike multiculturalist societies, Amazonian peoples believe in a shared spiritual unity of all entities, separated only by their corporeal diversity (Castro 1998, 470). Castro points out that "if there is a virtually universal Amerindian notion, it is that of an original state of undifferentiation between humans and animals, described in mythology. Myths are filled with beings whose form, name and behavior inextricably mix human and animal [and, I would add, plant] attributes in a common context of intercommunicability, identical to that which defines the present-day intra-human world" (471). For Amerindian communities, then, the "common condition of both humans and animals is not animality but rather humanity. The great mythical separation reveals not so much culture distinguishing itself from nature but rather nature distancing itself from culture [...]. Humans are those who continue as they have always been: animals are ex-humans, not humans ex-animals" (472). Like humans, plants and animals are seen as beings who respond intelligently to their surroundings and who have their own knowledge and sociality, which, through close contact, becomes entangled in human social life.

The cultural common ground of both humans and non-humans allows the transformation of ones into the others and the concomitant adoption of each other's points of view. The world is shaped by the conjunction of perspectives originating in different beings who are engaged in constant connections and dialogue. For Amazonian peoples, shamanism designates the ability of some humans to adopt the perspective and ways of thinking of non-humans and perform the others' acts and modes of being. Sculptures such as Krajcberg's can be regarded as a form of shamanism, in that they inscribe non-human existence in human cultural life. But we might also envision plants and animals as shamans who metamorphose into humans, embrace their ways of cultural expression and—for instance in the case of Amazonian mind-altering plants like ayahuasca or yopo—determine human thoughts and actions. Krajcberg's sculptures would thus result from a human/plant/wood shamanic ritual that hovers between art and activism.

Wooden Sculptures as Amazonian Plant Art

Krajcberg collected charred vines, mangrove roots and tree trunks he used to create his sculptures in various regions of Brazil affected by forest fires, from the Atlantic rainforest that used to surround his home in Nova Viçosa to the Amazon River Basin. The piece I examine more in-depth in this section, "Homage to Chico Mendes," is made of a burnt tree trunk gathered by the artist in the aftermath of a forest fires in Amazonia. The fires seasonally plaguing the Amazon are symbolic of the rapid disappearance of old-growth rainforests throughout the planet. The area's biodiverse flora is a paradigmatic example of the intricacy of plant existence and of its variegated forms of articulation. I regard Krajcberg's charred Amazonian wood sculptures as a form of material performance and signification within the vast array of Amazonia's vegetal expression.

My focus on an artwork made with Amazonian wood stems from the relevance of this region for Krajcberg's own theorization of his artistic praxis that culminated in the publication of the Rio Negro Manifesto of Integral Naturalism he penned together with Pierre Restany and Sepp Baendereck during a trip to the area in 1978.[16] Even though the manifesto has a clear universal aim, as McNee points out (2014, 110–11), the Amazon is central to its arguments. Framing the more abstract reflections in the body of the text, Amazonian nature and its vitality are referenced in the introductory and concluding paragraphs as the trigger for a reconceptualization of the arts (ibid.). As we read in the beginning of the document, "a context as exceptional as that of the Amazon raises the idea of a return to originary nature," which "should be praised as a hygiene for perception and mental oxygen" (76).

The authors of the manifesto claim that the Amazon is "the last reservoir and refuge of integral nature" (2017, 74) and ask themselves: "What kind of art, what system of language, can such an environment trigger, an environment that is exceptional from every point of view, and exorbitant when compared to our common sense?" (ibid.). Their answer was that only an artistic praxis in tune with nature can do justice to Amazonia. They decry the "tyranny of the object" in art that commodifies the natural environment and goes in tandem with a hyper-materialistic consumer society. The critical impulse behind the dematerialization of art that seeks to overcome consumerism is, in their view, only a partial solution to this problem (75). They believe that a "final

anthropological mutation" is needed that would trigger and a "Second Renaissance" (75, 76) of humans.

Epic as the formulations of manifesto certainly are, betraying a somewhat Romanticized view of artists and the power of their craft, the text is prescient in its demand of an overhaul of the human, Western, business-as-usual ways of inhabiting our planet that has led to the current environmental catastrophe. The repeated calls for a "restructuring" of "perceptive consciousness" that would allow for its "planetarization" or "universalization" beyond the narrow confines of humanity (75–6) can be read as an invitation to consider the key role of non-humans in human life and cultural productions. And the plea to "return to the hidden sense of things and their symbolism" (75) echoes new materialist theorizations on the vitality of matter. Krajcberg's creation *together with* plants/wood mirrors the spirit of the manifesto that challenges the "I to embrace the world and become one with it" as the "ultimate reality of human language" (76). Such language would no longer be just human but, rather, unite human and non-human forms of performance and signification, a development apparent in Krajcberg's incinerated wood sculptures.[17]

The 1978 manifesto did not directly reference the Amazon's Indigenous population, pitting only a vaguely described "ancestral" sense of nature against an industrial, urban one (76). In the New Manifesto of Natural Integralism, written by Krajcberg and Claude Mollard in 2013, the authors underscore their view, already present in the earlier document, that art should be committed to a "life in harmony with nature" (2017, 81). Unlike the first text, however, the latter manifesto directly ties the devastation of the Amazon rainforest to the destruction of the traditional ways of life of local Indigenous populations. Krajcberg and Mollard call on art to link "the most contemporary cultures to the more ancestral ones," in a bid to establish a balanced connection to the environment (80). The authors make a case for bringing together cutting-edge artistic work, Western environmental reflections and Indigenous beliefs. Such bridging of cultures was also the thrust of the previous sections of this essay that linked views on human/non-human relations in recent trends in the environmental humanities to native Amazonian cosmologies. A combination of Western art with Amazonian flora, Krajcberg's pieces can best be understood by resorting to traditions of thought originating in both of these contexts.

The sculpture "Homage to Chico Mendes" (Fig. 2) powerfully embodies the back and forth movement between Western and Amazonian cultures that became a hallmark of Krajcberg's artworks about the region. The title of the piece refers to rubber-tapper Chico Mendes (1944–1988), an Amazonian trade union leader and environmental activist. Mendes was assassinated by the son of a landowner in the Brazilian state of Acre because of his efforts to protect local land from deforestation through the creation of a so-called "extractivist reserve" in the area, where only traditional and sustainable extractivist activities are allowed, such as fishing, hunting or rubber tapping. Standing alone on the ground floor of Rio de Janeiro's Museum of Modern Art (Walter 1999, 137), the sculpture set the tone for the artist's exhibition as both an artistic tribute to Amazonian flora and to the activists who struggle to defend it, and as an indictment of agribusiness-led rainforest destruction.

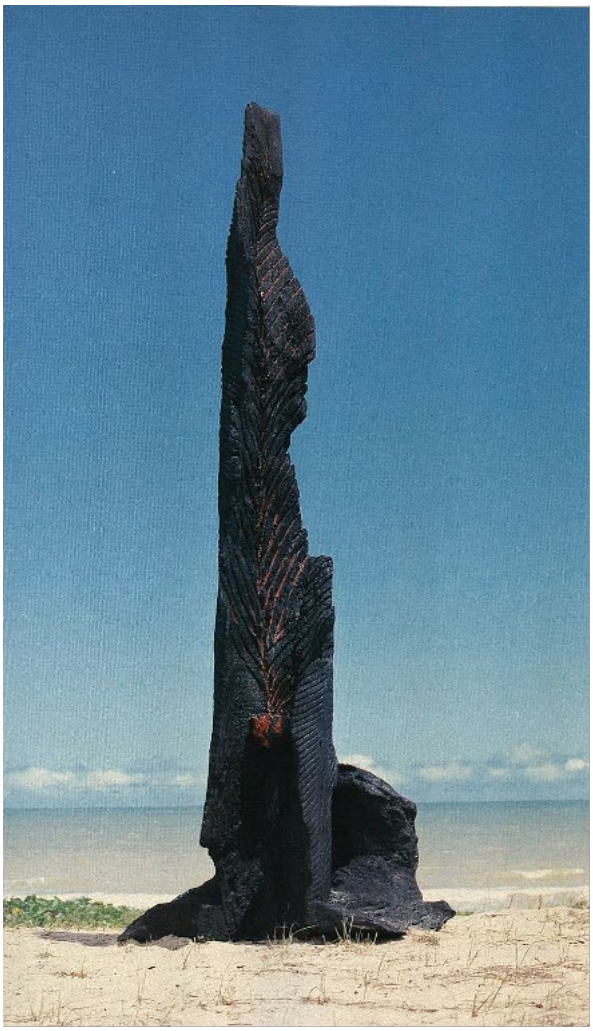

Figure 2: Homage do Chico Mendes. *Natural pigment over over trunk.* Frans Krajcberg: Imagens do Fogo, *1992.*

Made with the incinerated trunk of an Amazonian tree recovered after a forest fire, the sculpture embodies, shaman-like, a series of metamorphoses, as well as transmutations of meaning that reveal the instability of human/non-human and organismic/material dualisms. The wood of a dead tree, that is to say, plant life turned into matter, refers to another death—that of rubber-tapper Chico Mendes. The sculpture points to the intricate ties binding plant and human bodies, both in life and in death. Such a connection between the devastation of rainforests and the tragedies of human history were often underscored by the artist himself. He mentions that, when he beheld his first large-scale forest fire in the Brazilian state of Paraná, he realized that "the trees were like men calcinated by the war. I could not take it" (quoted in Isaac 2013, 133).

A Polish Jew who survived the Holocaust, where he lost his entire family, Krajcberg regarded the devastation of nature as a repetition of the horrors he witnessed during the Second World War. "The first time I wept after the war was in [the Brazilian Amazon state of] Acre, when I saw all that destruction," he states, "I could no longer tolerate man's barbarity once I found nature" (quoted in

Collontonio and Cravo 2005, 42). For Krajcberg, the assassination of Mendes goes hand in hand with the murder of the trees themselves who are relentlessly killed because of human greed. The striations carved into the wood of the sculpture stand for the activity of rubber-tappers who make small incisions in the bark of rubber trees to collect their sap. But the red pigmentation embedded in those striations is a clear reference to blood: the blood of all war victims the artist saw in his youth; the blood of murdered activist Chico Mendes; the symbolic blood of the charred tree whose death made that particular artwork possible; and the metaphorical blood of all other Amazonian plants destroyed in forest fires.

Still, the incinerated tree trunk in "Homage to Chico Mendes" cannot be reduced to a symbol of passive victimhood. The strong, dignified posture of the burnt trunk belies its interpretation as an inert, unresponsive entity, enlivened solely through Krajcberg's artist touch. The powerful impression the artwork leaves upon viewers results precisely from the encounter between Krajcberg's artistic skill and the signification of the former-plant-turned-matter that performatively articulates flora's suffering through the display of its mutilated body. Human, plant and wood as matter join efforts that coalesce in an artistic and activist statement against the gratuitous annihilation of rainforests in the Amazon and throughout the world.

Notes

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[1] This and all other quotes from an original in a language other than English are rendered in my translation. Page numbers refer to the original.

[2] The title of the movie could also be translated as *Krajcberg: The Poet of Vestiges/Remains*.

[3] As Isaac points out, Krajcberg had been using nature "as his main raw material" at least since the 1960s (2013, 134). He used fern relief, "rock" and "earth" paintings and employed found mineral tints in his artistic creations.

[4] For a detailed description of Krajcberg's artistis development, see McNee 2014, 101–107.

[5] Hegel makes this claim throughout his phenomenology, but see, for instance, paragraph 753 of the text.

[6] It is a well-known fact that rainforest soils such as those of the Amazon, are nutrient-poor. They need to be constantly replenished through the decomposition of organic matter. Once forests are burnt or cut down to give way to monocultures or cattle raising, soils quickly become depleted. This creates the need for clearing more and more areas of rainforest for agribusiness, creating a spiral of deforestation, soil depletion and renewed deforestation.

[7] Another definition of biosemiotics is: "a discipline that examines sign processes, meanings, and communication in and between living organisms" (Maran 2014, 260). For Wheeler, "the biosemiotic 'project' [...] consists in an elaboration [...] of the observation that all life—from the cell all the way up to us—is characterized by communication, or semiosis. This insight [...] places humans back in nature as part of a richly communicative global web teeming with meanings and purposes [...]" (2011, 270). As Kull, Emmeche and Hoffmeyer point out, already for Ferdinand de Saussure, the founder of modern linguistics, "semiology (the science of signs as he called it) was a field that would cover a much wider range of sign systems than human language" (2011, 3). Sebeok, the founder of biosemiotics, believed that "the process of message exchanges, or semiosis, is an indispensable characteristic of all terrestrial life forms," adding that "semiosis, independent of form or substance, is thus seen as a universal, criterial property of animate existence" (quoted in Maran 2014, 261).

[8] Kull, Emmeche and Hoffmeyer list several disciplines that have contributed to biosemiotics: biohermeneutics, as developed by Sergey Chebanov and Anton Markoš; biosemantics, put forth by Ruth Millikan, Walter Fontana, and Marcello Barbieri; Stephen Pain's biorhetorics; logic, especially studies of animal and vegetal logic; and biolinguistics, or studies on the biological basis of human language (2011, 12–13). Maran distinguished between semiology, which is mostly associated to European thought, and the semiotic tradition that can be traced back to American philosopher Pierce: "For most people in the humanities, at least in Europe, the word semiotics is associated, first of all, with the structuralist tradition, the semiology of Ferdinand de Saussure, the Prague linguistic circle, Louis Hjemslev, Claude Lévi-Strauss, Roland Barthes, and other representatives of the same tradition of thought. On the other hand, biosemiotics relates to another tradition of thought that, inside of semiotics, has become more and more eminent in the recent decades. This tradition proceeds from the semiotics of the American philosopher Charles Sanders Peirce and has been elaborated by his students or followers Charles W. Morris, Thomas A. Sebeok, Jesper Hoffmeyer, John Deely, and many others" (Maran 2014, 260) For Maran, the latter tradition is more open to considering the possibility of signification outside the realm of human discourse: "Unlike European semiology, which focuses on sign structures or systems, Peircean semiotics is also capable of dealing with various local sign relations in nature" (261).

[9] The point of departure of biosemiotics is "the realization that the sign-processing abilities in humans did not emerge de novo, but [...] evolved from and are built upon the more primitive sign-processing abilities of our animal ancestors" (Favareau 2010, 260).

[10] Krampen writes that "[t]here are three levels of meaningful cycles corresponding to predominance of indexicality, iconicity, and symbolicity, each higher process including also the lower. Indexicality, on the vegetative level [...] [i]conicity, on the animal level [...] [s]ymbolicity, on the human level" (2010, 270).

[11] Bennett argues for the vitality of matter: "I will try to give voice to a vitality intrinsic to materiality, in the process absolving matter from its long history of attachment to automatism or mechanism" (2010, 3). "The project, then," writes Bennett, "is to theorize a kind of geoaffect or material vitality, a theory born of a methodological commitment to avoid anthropocentrism and biocentrism—or perhaps it is more accurate to say that it is born of an irrational love of matter" (61).

[12] As Iovino and Oppermann put it: "All these ideas—a distributive vision of agency, the emergent nature of the world's phenomena, the awareness that we inhabit a dimension crisscrossed by vibrant forces that hybridize human and nonhuman matters, and finally the persuasion that matter and meaning constitute the fabric of our storied world—are the basic premises of material ecocriticism" (2014, 5).

[13] Barad decries the linguistic turn in the humanities: "Language has been granted too much power. The linguistic turn, the semiotic turn, the interpretative turn, the cultural turn: it seems that at every turn lately every 'thing'—even materiality—is turned into a matter of language or some other form of cultural representation. [...] matters of 'fact' (so to speak) have been replaced with matters of signification (no scare quotes here)" (2007, 132).

[14] Bennett also mentions that agency lies in assemblages, not in discreet entities in chapter 2 of her book, titled "The Agency of Assemblages." She writes: "If human culture is inextricably enmeshed with vibrant, nonhuman agencies, and if human intentionality can be agentic only if accompanied by a vast entourage of nonhumans, then it seems that the appropriate unit of analysis for democratic theory is neither the individual human nor an exclusively human collective but the (ontologically heterogeneous) 'public' coalescing around a problem" (2010, 108).

[15] "As Barad points out, "the primary ontological unit is not independent objects with inherent boundaries and properties but rather phenomena. [...] The notion of intra-action (in contrast to the usual 'interaction,' which presumes the prior existence of independent entities or relata) represents a profound conceptual shift" (2007, 138).

[16] Negro River, or Black River, is one of the main waterways of the Amazon River Basin and one of the largest tributaries of the Amazon River.

[17] For a history of the reception of the Rio Negro Manifesto in Brazil and in Europe, see Walters 1998, 106–108.

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Biography

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PERFORMANCE
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PINE-ING FOR A VOICE: VEGETAL AGENCIES, NEW MATERIALISM AND STATE CONTROL THROUGH THE WOLLEMI PINE

CHANTELLE MITCHELL AND JAXON WATERHOUSE INDEPENDENT SCHOLARS

At some point in our lives, most of us will engage in some way with a language of flowers; their use to convey a sentiment beyond mere words. This may be a bouquet of roses given to a loved one, for example, or of lilies upon the occasion of a death. The exchange of floral arrangements is a performative and linguistic signal, for embedded within these bouquets are coded gestures; emotion conveyed by and through petals and leaves. Whilst the concept of a language of flowers exploded in popularity in the West in the nineteenth century, it is suggested that the employ of flowers 'as meaningful signs that are claimed in the service of science and sentimentality' can be traced back through history (Kranz 2017, 195).

This language of flowers is 'based on the idea that one can communicate feelings by encoding them in floral signs,' a vernacular language tied to place, but too, to the Earth from which the flowers bloom forth (194). The floral, laden with symbolic meaning, becomes a linguistic tool wielded by the human. But when we consider the sheer immensity of plant matter, which comprises some 80% of the Earth's biomass, we ask what of those *other* plants, those which would never be included in a bouquet? What could it mean to divine a language for those plants? What meaning have they accrued, and how have they been co-opted as a tool towards human ends, beyond their immediate practical uses of food, fuel and shelter? Through this paper, we attend to the Wollemi Pine (*Wollemia nobilis*), considering what this plant might convey in the form of a vegetal shorthand and to what ends this is mobilised; but further, what it might mean to read this plant, and listen to it from a New Materialist perspective. In introducing this paper with the concept of a language of

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flowers, we take a step towards a vegetal communication. While our engagement here is with the Wollemi as species, rather than its gymnosperms, there is a recognisability in this concept that proves an entry point from which we can further excavate human and plant communication within theoretical frames. The Wollemi, a monumental and prehistoric tree growing in secret seclusion in the Blue Mountains of New South Wales, on the lands of the Wiradjuri, Dharug, Wanaruah and Darkinjung people; presents a unique case study through which to consider vegetal agency amidst communication, contemporary geopolitics, and the so-called Anthropocene.

In his considerations of plant intelligence, Daniel Chamovitz acknowledges that 'Plants lack the structures for purposeful vocalization' (2012, 17). Beyond vocalization, the communication of plants is identifiable through movement and chemical signalling, a fact spoken to by theorist Michael Marder (2013a, 75). Yet, the notion of a language of flowers imposed upon the vegetal belies the 'uniqueness of [plant] existence,' limiting the possibilities of vegetal communication to narrow anthropocentric modes of communication (Marder 2013a, 8). However, through New Materialist frames which recognise the agentic force of the more-than-human, it becomes possible to apprehend plants as active and willful, but also part of a co-constitutive network of relations. Broadly, New Materialism can be understood as the embrace of 'a non-anthropocentric realism grounded in a shift from epistemology to ontology and the recognition of matter's intrinsic activity' (Gamble, Hanan and Nail 2019, 118). Within this, however, we focus upon a vital New Materialism, one heralded by the 'ontologization of an immanent activity of vital forces minus the mechanistic passivity of atomic matter' (Gamble 2019, 120). These new (or *renewed* materialisms) allow for comprehensions of agency alongside developments and shifts in the natural sciences which, as we will encounter through the vegetal, allow for transformations in traditional hierarchies of value across the human and the more-than-human (Coole and Frost 2010, 2).

While this theoretical framework remains troubled, thinking in this manner provides a grounding from which to re-evaluate the significance of matter; wherein it is possible to apprehend the 'certain vital force' inherent in agents prior to this force being enacted through any kind of performative relationship (Bennett 2010, 24). The vegetal provides a ready example with which we can mobilise this mode of thinking, in consideration of the molecular level at which plants operate. As Natasha Myers explains in light of the photosynthetic processes undertaken by plants, 'pulling matter out of thin air, [plants] teach us the most nuanced lessons about *mattering* and what really *matters*: their beings and doing have enormous planetary consequences' (Myers 2016). Reconsidering matter through New Materialism offers an insight into the manner in which the more-than-human has been constructed, shaped and limited through the primacy placed upon the worldmaking capacities of the human, and the anthropocentric veil placed over all else. The re-evaluation of the more-than-human that occurs within New Materialism affords an opportunity to begin again; starting with the base matter that comprises beings, from which we can apprehend the vital force inherent within their physical structures and perceive them as agentic beings. In re-evaluating the position of plants and recognising plant agency beyond the human, it becomes possible to think of relational entanglements in which plants too have 'histories, forged in ongoing relations with surroundings that may or may not include human beings' (Ingold 2011, 31). Attuning to these histories (but also their presents and futures) in relation to a vegetal communication

requires 'Listening for the response of the other and an obligation to be responsive to the other, who is not entirely separate from what we call the self,' or recognition of the co-constitutive nature of being-in-the-world (Barad 2012, 69). This occurs in contrast to the ascription of symbolic meaning to the vegetal, as identified in the language of flowers mentioned earlier—a one-way communication of talking for, not talking *with* the vegetal.

Exploring the communicative capacities of these plants and the manner in which they are spoken over by the human unfurls complex entanglements of power and place, highlighting the continued imposition of a muteness upon the vegetal. It is 'plant blindness;' a resultant tendency to either ignore, discount or speak over the vegetal, offers Jeffrey Nealon, in tracing a line of philosophic thought through Heidegger and Aquinas back to Plato, that ensures that plants remain in the position of 'the lowest threshold of living things: stuff that lives solely to serve the other, "higher" beings' (2015, 30).[1] This narrowing of vegetal existence by Plato to mere food for the human seeded the figuration of plants as ontologically static and mute, absent of 'world' in any meaningful sense. Contemporary philosophical and scientific approaches, however, move beyond these limited framings, recognising and emphasising the motion, agency and willfulness of the vegetal realm, and it is within this expanded frame that our examination of the Wollemi Pine takes place. Indeed, by listening to, or becoming aware of the communicative capacities of plants, we are presented with an opportunity to destabilise traditional Western philosophical framings of human-nature hierarchical relationships, and to move towards a recognition of plants as kin—which holds enormous potential for constructive mobilisation and change in the face of our unfolding climate crisis.

Landscapes of Vegetal Agency

Amidst the destabilisations of this crisis, Myers offers a helpful shift away from the anthropocentric notion of the Anthropocene, an acknowledgement of the crucial role of the plant world in supporting life on Earth through what she has termed the 'Planthropocene.' She writes that, 'we are only alive because they are. The thickness of this relation teaches us the full meaning of the word *interimplication*' (2017, 125, italics added). This interimplication is our entanglement with the plant word, the undeniable connection between the human and vegetal. Recognising this entanglement, and our dependency upon the vegetal it implies, Myers further offers, is a crucial step towards 'vegetalizing our human sensorium' (Myers 2014), in order to 'make allies with these green beings' and 'get to know them intimately and on their terms' (Myers 2016). In the words of Hannah Pitt, plant knowing is plant being, and by building practices of reciprocity, rather than paternalism in relation to plants, it becomes possible to enact plant-human relationships that apprehend the agency of the vegetal (Pitt 2016).

Bawaka Country et. al. presents a unique example of listening to, learning from and collaborating with plants as agentic through the experience, practice and publication of research into ways of reciprocal being (2015). This collaborative research project involves many voices and emerges from the knowledge of the Gumatj people. Uniquely, however, Bawaka Country, the land itself, is acknowledged as contributor and collaborator, given voice within research through attunement,

connectivity, and recognition of being beyond anthropocentric frames. Whilst this text does not proffer to achieve the collaboration, consultation and shared plant knowledge as undertaken by Bawaka Country et. al., the possibility of knowing plants upon their own terms presents an opportunity to listen in recognition of plant agency

We perceive the recognition of plant agency as a key tenet of 'collaborative survival,' as outlined by anthropologist Anna Tsing; survival only possible through a reconfiguration and strengthening of kinship ties in human/more-than-human relationships (2015, 20). Contemporary approaches to the more-than-human have sought to challenge framings of matter which subordinate the agency and presence of animals, plants, geology and beyond in service of this aim. These New Materialist and posthumanist approaches recognise the formerly 'ghost-like presence in contemporary theoretical approaches' of plants (Jones and Cloke 2002, 4), refuting the inertness ascribed to nature in the face of human action (Gibson 2018, 5), and arguing for greater recognition of vegetal being amidst the broader shift toward ecological agency within theory. In challenging these framings and seeking to render apparent the thick interimplication of the human and vegetal, emergent landscapes of vegetal ecologies counter the denigration of plant life as immobile and non-sentient. A multitude of perspectives contribute to such thinking, with plants positioned as 'entangled in political, economic, and cultural systems' (Kirksey et al. 2014, 1), an approach furthered by multispecies ethnographies (Kirksey and Helmreich 2010; Tsing 2015), and decolonial approaches (Bousfield 2020; Mamdani 2012). Further, New Materialist approaches (see Bennett 2010, 8; Braidotti 2019) and agentic approaches (Marder 2013b; Tsing 2012)[2] reinforce that 'nature can no longer be seen as an inert backdrop to human action' (Gibson 2018, 5).

Challenging the positioning of plants as 'the furniture of the planet, necessary, useful, attractive, but "just there"' (Mabey 2016, 4) requires a change in human perception of plants. Marder writes, in seeking to illuminate the agentic actualities of plant life beyond the human frame: 'the performativity of plants is their mode of being in the world—their affecting and being affected by the places of their growth. Plants are artists of themselves: they create themselves and their environments all the time' (2018, 26). For Tsing, in reference to the work done by Marder in this area, 'The idea that plants should be an icon of stillness, rootedness and passivity is an unfortunate legacy of Western philosophy's neglect of actually existing plants' (Tsing 2017, 21; see also Marder 2013). Plants engage in their own rich lives of movement and transit. From vertical growth which sees canopies grow tall, to roots burrowing into the earth, holding together soil and cultivating mycorrhizal relationships, to migratory journeys of growth, the movement of plants enables rich vegetal ecologies across place. These vegetal ecologies are spaces of engagement, collaboration and communication.

The conception of vegetal ecologies as spaces of symbiotic living and interaction is buttressed by the recognition of plants as possessing 'active intelligence' (Trewavas 2002; Hall 2011, 144), a foundational aspect of which is their capacity to communicate and interact both above and below ground. Above ground communication may occur during reproduction, or amidst plant-herbivore relationships, through the deployment of certain scented chemicals to attract pollinators, for example (Hall 2011, 153). In terms of subterranean communication and interaction, this can take

place through allelopathy, which is the secretion of secondary metabolites from root systems so as to suppress the growth of neighbouring plants (152). Studies also demonstrate the capacity for the roots of various plants to 'veer away from competition with the roots of other species' (153). Recent studies also demonstrate the manner in which plants can act as 'green phones,' mediating communication between above-ground and below-ground insect life (Soler et al. 2008; Pangesti et al. 2013). Indeed, it is the case that '[p]lants move, they move other things, they move people, and they are themselves being moved around' (Thorsen 2017, 11). These vegetal ecologies are rich and deep entanglements, like the subterranean morass of mycorrhizal interactions that occur out of sight. It is the case also, however, that humans are deeply enmeshed within these vegetal ecologies, with or without us realising it—although within the Anthropocene, it is becoming increasingly hard to ignore.

As this perception of the vegetal world as static changes, we are increasingly exposed to the artificiality of the privileging of human over nature; a construct accepted as truth only through its durational and persistent presence. Time is a significant aspect to the encounter between the human and vegetal, and the development of vegetal ecologies. We think here of the length of the relationship between the human and vegetal. As Bruno Latour acknowledges, human history and communication is tied up in the vegetal: 'We cannot disentangle our bodies, our houses, our memories, our tools, and our myths from their knots, their bark, and their growth rings. You hesitate because I allow this tree to speak? But our language is leafy and we all move from the opera to the grave on planks and in boxes' (1993, 95). But we also apprehend the dissonance that exists within this encounter; the 'time-lag between the human and the plant: the wildly different time scales of movements, behaviors or responses,' as identified by Marder (2018, 28). Within this encounter, taking place across temporal and ontological zones, there is a possibility of dismantling the framing of plants as the 'lowest threshold of living things' (2015, 30), toward 'contingent, embodied and less linear human-plant histories,' which seek to recognise the co-constitutive powers of the vegetal world (Head and Atchison 2009, 241; see also: Doolittle 2004; Farley 2007; Jones 2007). Within a New Materialist context, we acknowledge that 'phenomena are caught in a multitude of interlocking systems and forces and [...] consider anew the location and nature of capacities for agency' (Coole and Frost 2010, 9).

Indeed, what might emerge from such capacities, and what would a shared history look like? The existence of the Wollemi stretches back some 200 million years, far eclipsing the lifetimes of humanity's earliest ancestors. How much richer and deeper would it be than the anthropocentric narratives that have been set in place as histories of the world? Though long positioned as mute witnesses, the mere backdrop to human history, what might it tell us if it could speak? Within these frames we begin to sketch out the contemporary relationship between humans and the Wollemi and its politicisation, before moving into the speculative, to consider a reading of the Wollemi as attempting to be freed from anthropocentric hubris.

From miraculous rediscovery to colonial reperformance: the Wollemi Pine.

A copse of ancient trees persists in an undisclosed location deep within the World Heritage-listed Wollemi National Park. Known also as Ganguddy by the local Wiradjuri, the park is a nationally recognised wilderness site within the Blue Mountains region of New South Wales. Contained within the Wollemi National Park is half a million hectares of old-growth forest, an environment reminiscent of Gondwana, and the time before geologic fracture. This thicket of ancient trees is one of the last wild populations of the Wollemi pine, a conifer from the *Wollemia* genus. What is remarkable about these trees is not only their scarcity, but that, until recently, the Wollemi was thought extinct and known only from fossil records. This dark green conifer, an evergreen that grows upwards of 30 metres in height, is a plant with a history that stretches back almost 200 million years, far eclipsing the human frame by a staggering amount. Despite the presence of the Wollemi within the fossil record, its story goes back only some 30 years, to the human 'discovery' of it. In rewriting the history of this plant, the human narrative ignores the enduring presence of the Wollemi. The Wollemi has witnessed the entire history of so-called Australia, from the arrival of the earliest inhabitants from the north, through to the invasion unleashed by arrivals from the South, but also the development of the landscape—innumerable seasons, unimpeded growth, and now, devastation.

The 'miraculous' rediscovery of this living fossil, the last remnant of the *Wollemia* genus, occurred as a team of abseilers explored the Greater Blue Mountains World Heritage Area. Their movement through the canyons and gullies of this remote wilderness revealed a small, untouched enclave in which these trees had been able to survive. This lack of human contact is given as one of the reasons why specific trees within this enclave are estimated to be over 1000 years in age (Wong, 2019). Whilst this isolation has aided the species' survival, it has also limited the Wollemi in some ways: initial genetic studies of these ancient conifers originally revealed no genetic diversity in the small wild population that was spread across four close sites—an 'evolutionary bottleneck' (Greenfield, et al. 2016; Peakall, et al. 2003). More recent studies, however, demonstrate small genetic variations between specimens, but, given the Wollemi once covered a vast area of the Gondwanan supercontinent, these similarities in genetic material demonstrate that for extended periods the tree has existed in relative seclusion (Greenfield, et al. 2016). The continued survival of the Wollemi is phenomenal in a time when plant growth has been reduced by half from the beginning of human civilisation (Bar-On, Phillips and Milo, 2019). This survival is set to become even more perilous, as the ongoing environmental degradation that results from climate change continues to present a threat to the Wollemi's existence (see Zimmer et al. 2014).

The ghostly figure of the Wollemi is further embedded through the manner in which the tree is described; a pine dinosaur (Anderson 1994), a lonesome pine (Anderson 1995, 1997; Jamieson 2005), a living fossil (Woodford 2002) and a dinosaur tree (Woodford 2005). The names acknowledge the prehistoric nature of the Wollemi, but the rarity hinted at in these names is reinforced by the deliberate absence of the conifer in a public sense. As a conservation measure, the exact location of the Wollemi grove has been kept a closely guarded secret. This is to preserve not only the trees themselves, but the fragile, symbiotic ecosystem in which they have thrived for

millennia. Initial plans to protect the Wollemi grove noted the introduction of pathogens and weeds by visitors as threats to its survival, and in 2005, this threat became manifest when members of the wild population were found to be infected with *Phytophthora cinnamomi*, a harmful fungus introduced by unauthorised visitors (Salleh 2005). The safety and security of the Wollemi has come under pressure more recently, as their habitat was gravely threatened during the Black Summer bushfires of 2019/2020. As these fires razed large sections of Eastern Australia, including 81% of the World Heritage-listed Greater Blue Mountains Area and 54% of the NSW components of the Gondwana Rainforests, the Wollemi sheltered; shielded from human interaction through secrecy, but unable to be protected from the increasingly disastrous impacts of anthropogenic climate change (Australian Disaster Resilience Knowledge Hub 2020). The risk of extinction posed to the Wollemi through these fires was so great that a team of firefighters were deployed by helicopter into their remote habitat as a matter of critical importance. Although some specimens were charred by the advance of the Gospers Mountain firefront, this grove of dinosaur trees is predicted to survive, at least until the next climactic challenge (Morton 2020).

Against this backdrop of extinction, absence and rediscovery, what could the thick and bubbled bark of this living fossil mean as a message? What might an artfully arranged spray of Wollemi within a bouquet symbolise? Mobilised within this hypothetical bouquet, the casual gifting of an endangered posy reinforces the anthropocentrism which has characterised human-plant relationships. However, whilst this image of the Wollemi as bouquet is mobilised here rhetorically, the gifting of entire specimens occurs within a geopolitical context, and in this frame, is heavily laden with significance. A sprig of Wollemi might signify a miracle, absence or rediscovery; something that in some way acknowledges time beyond human frames. The name 'Wollemi' itself carries significance, coming from the Aboriginal word 'wollumii,' meaning 'watch your step' or 'look around you' (Jones, et al. 1995); a name which speaks to the chance discovery of the plant, but further echoes an attentiveness to the looking that our plant blindness often obscures. This language, however, of ancientness, discovery and isolation, is an anthropocentric one, ascribed to the plant through human relationships. Within the Australian context of colonisation and dispossession, this feels amplified, and significantly more fraught. Since Invasion, this colonial power has controlled and shaped the landscape and vegetal ecologies of the country, radically altering and decimating human and more-than-human lives. Indeed, as Deborah Bird Rose, drawing from the work of Val Plumwood, writes, '[…] the legacy of colonisation in Australia "includes both genocide and ecocide"' (2004, 35).

With the movement of people through colonisation comes the movement of plants; as presence, through introduction to a non-native habitat, or absence, through felling and land clearing. This movement, particularly in the context of the invasion of so-called Australia, saw the projection of European taxonomic categorisations upon the land. With these categorisations came value judgements, which at the first instance falsely designated the land as *terra nullius*, but with the spread of the colonial population further into the country came perceptions of the land as wild, untamed and needing improvement (Instone and Taylor 2016, 135). From the entrance of the *Endeavour* into Ka-may, the lands and waters of the Gadigal people of the Eora Nation, these perceptions and categorisations unfolded. This location would come to be named 'Botany Bay,' in

response to the vast quantities of plant specimens collected by the ship's botanists, Joseph Banks and Daniel Solander. Banks and Solander approached the vegetal ecologies of the continent 'as Linnaean botanists in a new land, its places and plants unnamed by any other; as if they were in a veritable *terra nullius*' (Buchan 2020). The importance of the Linnaean system within the framework of colonialism cannot be understated; systematising the study of nature through a new method of ordering and a new naming procedure fueled the racial speculation that became intertwined with colonialism and the varying strands of Enlightenment thinking. It is also important to note, within the context of this paper, that many of Linnaeus' writings and lectures were 'devoted to instructing others on "how to read Nature as any other Book"' (Baber 2016, 672). We can therefore interpret Linnaean taxonomy itself as a language of flowers, albeit one free from sentiment.

The perceived 'mastery' of nature, including the vegetal world, constituted an 'integral element of colonial power' and enabled the continued subjugation of the more-than-human (Baber 2016, 660–661). Within the Australian context, an integral part of post-Invasion development was the clearing of land so as to establish pastoral properties and settlements. The sense of alienation experienced by the early colonists have been recorded at great length; the oft-quoted 'strange scribblings of nature learning how to write' (Clarke 1893, v), a nature that was 'out of kilter,' 'widely considered to be metonymic of an attendant spiritual dis/ease' because it differed from the familiar natural environments of Europe (Turcotte 1998, 10). Edward Wilson, founder of the Zoological Society of Victoria, remarked of Australia that he had 'no idea of living in a half-furnished country,' exposing deep ignorance and indifference to a landscape which differed widely from the pastoral British countryside (1857, 86). The colony was seen as 'sadly deficient in useful and attractive creatures,' which led to the importation of European species in order to 'rectify' perceived absences in the landscape (Gillbank 2007, 69).

One such organisation tasked with this introduction of plants and animals of use and pleasure was the Acclimatisation Society of Victoria. As Gillbank explains, the ASV was 'an organisation truly of its time and sought to complete the work which Nature had apparently left incomplete in Australia (2007, 73–74). It is worth making abundantly clear here, through a helpful quote from Gillbank, how intertwined this project was with that of the colonial government. Speaking to a congregated ASV in 1862, Professor Frederick McCoy stated:

> If Australia had been colonised by any of the lazy nations of the earth, this nakedness of the land would have been indeed an oppressive misfortune, but Englishmen love a good piece of voluntary hard work, and you will all, I am sure, rejoice with me that this great piece of nature's work has been left to us to do. (cited in Gillbank 2007, 74)

Indeed, the task that McCoy perceived as having been left to the industrious British is an ecological component to the broader 'civilising mission' the colonial society laboured under. As Lazarev helpfully outlines, the Enlightenment in Australia 'was predominately materialistic, agrarian and centred on the reclamation of what was regarded as wastelands at the expense of the dispossessed and excluded Indigenous people' (2018, 7). More broadly, however, this civilising mission was the belief, rooted in stadial theory, that it was the task of more 'advanced' societies to

facilitate the modernisation of those seen as being less developed. This had devastating impacts upon Indigenous Australian peoples, but also the more-than-human world. Whilst the Linnaean system of taxonomy and naming may have created a language of flowers, and the romantic language of flowers overlain them with human sentiment and significance, colonial attempts to 'rectify' served to erase the already present, through removal or through the introduction of species that have come to be considered as pests. Notable cases include *Echium plantagineum* (Paterson's curse), *Mimosa pigra* and two subspecies of *Chrysanthemoides monilifera* (Boneseed and Bitou bush), all of which were introduced during the 19th century as ornamental plants but are now considered dangerous weeds.

The colonial devastation wrought by Invasion enacted genocidal erasure and willful destruction of Indigenous knowledges, landscapes and peoples as it spread across the Australian landscape. This devastation continues as the reverberations of colonisation persist, deeply felt yet willfully ignored within those structures that emerge from colonial power. Meaningful engagement with legacies of Invasion would necessarily involve recognition of Indigenous sovereignty, but with this, more-than-human agency and care for Country, as understood within Indigenous cosmologies. Indeed, Kenelm Burridge, as quoted by Rose, acknowledges Australian Aboriginal life as 'perhaps the most complicated representative of human life,' in recognition of notions of agentic and lively Country (2000, 25). New Materialist and agentic recognition of the liveliness of matter, and the co-constitutive nature of the more-than-human, 'spin[s] itself on the backs of non-European thinkers,' and is deeply indebted to 'their millennia of engagement with sentient environment, with cosmologies that enmesh people into complex relationships between themselves and all relations, and with climates and atmospheres as important points of organization and action' (Todd 2016, 6–7). Despite the Wollemi's seclusion and endangerment, hidden in secret on the lands of the Wiradjuri, Dharug, Wanaruah and Darkinjung people, we recognise that it nevertheless is part of active, continuing and very much alive Country. Although there is no homogenous Aboriginal conception of 'Country,' relationship to Country can be positioned, in the words of Noonuccal scholar Karen Lillian Martin, as 'relatedness,' emerging from rituals and ceremonies, but too, fishing, camping, talking about or walking on Country (Martin 2008, 80). Within the frame of Indigenous cosmologies, Country here speaks to the liveliness and co-constitutive nature of all things as acknowledged within the New Materialist frame.

Since Invasion, vegetal ecologies have been wielded by the colonial administration and the Australian government in turn. With the Wollemi's discovery, it too has become mobilised within this web and ascribed with anthropogenic significance. The messaging ascribed to the Wollemi through a particular form of political shorthand has seen the tree spread far from its isolated habitat, through the intervention of the human hand. Cuttings from the Wollemi have enabled the establishment of ex-situ populations in the Royal Botanic Gardens at Mount Annan in Sydney and botanic gardens overseas but have also increased the commercial availability of the Wollemi across Australia and internationally. But further to this, the Wollemi has moved beyond the confines of its historic home and has been engaged in diplomatic service by the Australian government. These movements bring the Wollemi into an international political sphere, gifted to embassies in Taiwan, Austria, New Caledonia, and Brazil (Wollemi Pine 2006). In 2004, the symbolism of the Wollemi was

mobilised with the gift of the plant to the Vienna Botanic Gardens, described as representing 'the strong and enduring friendship Australia enjoys with the people of Austria,' drawing a comparison between the long history of the plant itself and the political desires of the Australian government (Wollemi Pine 2004). More recently, in 2015, then-Prime Minister Tony Abbott gifted a Wollemi seedling to Singaporean Prime Minister, Lee Hsien Loong, to symbolise relations between the two countries—'one that is precious, one that is evergreen, fresh and regularly blooming' (Liang 2005).

This deployment of the Wollemi as a diplomatic symbol reads into the tree a distinct 'Australian-ness.' The irony of this is clear, upon recognition that the perceived extinction of the Wollemi occurred millennia before 'Australia' was even a glimmer in the eye of the Empire. Further, the precarity of the Wollemi's contemporary existence means that it is mobilised as an international symbol of a population who have never been exposed to it amidst its natural setting. It is hard to miss also, as previously considered, the value ascribed to the Wollemi in light of its near extinction. In many ways, this gifting of the Wollemi is striking when contrasted with actions undertaken by the Australian Government which serve to imperil the more-than-human. Through performing this act of gifting, the problematic anthropogenesis we read into existing structures of power is reinforced. This reinforcement serves to further politicise the Wollemi, and, at the same time, reasserts the casual disregard of the Australian Government in relation to environmental concerns. In co-opting the Wollemi for deployment within the diplomatic frame, the tree is politicised within global frames, but more deeply within those of the local.

In terms of an arboreal vernacular, the Wollemi, as symbol and gesture becomes part of the language of the coloniser as it sweeps across the landscape; a governmental tool that is wielded in the attempt to further legitimise itself. The ancient Wollemi is forced to perform within these narrow and problematic frames, limiting its speech to a state-sanctioned script—one in which the colonial act is reperformed endlessly between dignitaries, moving Invasion beyond the single event to stretch across time. This occurs against the backdrop of climate change and collapse (itself deeply entangled in colonial histories) placing the vegetal, especially the precarious Wollemi, at further risk of extinction. While the Wollemi has become implicated within the legacies of colonialism through being utilised in this manner, this still serves to obscure the interimplication of ourselves and the vegetal world. This form of 'botanical imperialism' manifests as problematic cultivation, the 'appropriation, control and economic use' of the landscape by colonial powers in an attempt to figure the environment in an idealized form; one reminiscent of a 'civilized' (read: European) landscape. The political and vegetal are here deeply entwined with place and presence; a native plant, engaged in a complex relationship with occupation and invasion.

Listening to Agentic Plants

Like tendrils entwining, complex human-plant relationships can be attuned to through the recognition of the more-than-human in relation to colonisation and control. As we consider the capacity of communication through the vegetal, we posit that the agentic nature of the Wollemi has become complicated by the manner in which this plant is 'caught up [...] in specific relations of knowledge, power, colonialism' and biopolitics (Sandilands 2016, 227). Laden in this manner, the

Wollemi accrues significance as a symbol within the language of the coloniser and through being mobilised and weaponised as symbol.

As previously canvassed, the Wollemi is gifted under the guise of representing a cultivated, colonial 'Australian-ness' and a desire to ensconce this shallow conception of nationhood within broader political spheres. Mobilised to further this facile conceptionof sovereignty, the casual gifting of the tree seems fitting. Removed from the earth, it becomes a political tool to be wielded. Ensconcement within these frames of international diplomacy and transit belies the deep roots of the Wollemi, which can be attuned to beyond this colonial frame, as part of a unique, persistent ecology. If the Wollemi must be mobilised within the context of sovereignty, we posit that it would instead speak to enduring and persistent conceptions of Country.

It is only through the shallow manipulation of the Wollemi within diplomatic frames that we can infer a deeper resonance of the conifer within Indigenous cosmologies. In light of this deployment, and in the relative absence of a durational cultural significance of the Wollemi, it becomes necessary to attempt to situate this plant within the landscape of our contemporary context. Again, we reiterate that this is reliant upon a willed reading of the Wollemi, but one oriented towards constructive and ethical ecological ends. We find ourselves keenly attuned to the spectre of extinction that seems to lurk, unseen, within every landscape. Anthropogenic climate change brings consistent temperature increases and long periods of drought, and subsequent longer and more catastrophic bushfire seasons. Increasingly devastating, they put innumerable species at risk, including the vegetal. Apprehending the Wollemi within this frame, we recall readily the existential precipice it faced during the 2019/20 bushfire season—facing extinction mere decades after its rediscovery. The continued existence of the Wollemi in light of this can enable its ready positioning within our current cultural moment as a symbol of ecological hope. This relates both to the survival of the Wollemi itself but can also be apprehended as speaking to a relative shift in attitudes towards the more-than-human. It is hard not to ascribe an apprehension of value in the more-than-human, in light of the response undertaken by authorities to the Wollemi's brush with second extinction.

It may be that, by acknowledging our critical reliance upon the vegetal world, plant histories and their wider cultural contexts, 'we might rewrite plants as key actors with agential capabilities, helping to shape history and culture' (Crawford 2017, 203). In treating the Wollemi as an agentic being, we question what we might glean if we attune to its vegetal language. Here, we endorse the Latourian perspective, wherein he acknowledges that he does not 'claim that things speak "on their own," since no beings, not even humans, speak on their own, but always through something or someone else' (Latour 2004, 69). In the case of this conifer, we look to its unique persistence and endurance for signs of what it might be able to impart upon us, in lieu of traditional human communicative methods, such as speech. Latour identifies the need for a speech prosthesis as a means of communicating the more-that-human to the human and aiding the more-than-human to 'speak for itself' (67). We suggest that it becomes possible for the human to attend to the vegetal in a Latourian prosthesis-like manner, via an attunement to the plant's flourishing or withering and in recognition of its agency. This means, however, that in lieu of an established, sensible method

of communicating across human/plant relationships, our gleaning of 'lessons' from the vegetal will be necessarily underlain by an assumption that remains, however unfortunately, anthropocentric.

In the context of the Wollemi, and in acknowledgement that this is a willed reading of the plant, it becomes possible to think of the continued survival of this prehistoric conifer in such an isolated location as a willful act on the part of the Wollemi. Whilst we fully recognise how fantastic this may seem, the leap of faith implicit in this ascription of will to plants may be a necessary step to take in our attempts to attune to a mode of vegetal thinking. The Wollemi presents the opportunity for the attuned human to learn of endurance amidst ecological crisis. It might be that by turning toward the Wollemi, we might learn to lessen our place in the world. But furthermore, as a Lazarus taxon and a critically endangered species, the real risk of extinction for the more-than-human, particularly within the context of our rapidly changing natural world, becomes increasingly clear. The durational presence of this species across millennia of human history throws into sharp relief the rapid rate at which humanity has changed and the mutability of borders, governments and nations.

We have endeavoured to demonstrate through this text the manner in which the vegetal is readily ensnared within complex entanglements of human and vegetal biopolitics. In exploring the case of the Wollemi, we have considered how the imposition of symbolic meaning upon vegetal beings has the capacity to obscure, if not outwardly deny, their agentic nature. We have too sought to identify that this speaking for the vegetal invites their weaponisation towards distinct political ends. In recognition of increasing globalisation and connectivity, we think too toward the role of the vegetal within this landscape of relations. As we experience the broad-ranging consequences of anthropogenic climate change emerging from durational environmental mismanagement, the interimplicative relationships between the human and more-than-human become clear, in the navigation of contemporary precarity. Through practices of attention, attunement and listening, in recognition of plant agency, the communicative capacities of the vegetal can be gleaned from beyond the cacophony of human voices and the symbolism foisted upon them. The reconfiguration of human/plant relationships towards ethical interimplication is increasingly critical, so as to ensure the continued dynamism of our shared world.

Notes

[1] Plant blindness as a concept emerged as a metaphorical way of speaking to the perceptual barrier in recognising the presence and richness of plants, with Wandersee and Schussler 'diagnosing' those with plant blindness as 'exhibit[ing] symptoms such as the following: (a) thinking that plants are merely the backdrop for animal life; (b) failing to see, notice or focus attention on plants in one's daily life; (c) misunderstanding what plants need to stay alive; (d) overlooking the importance of plants to one's daily affairs.' (Wandersee & Schussler 1999, 82). Contemporary critique of the concept of plant blindness, however, acknowledges the possibility of ableist overtones (see MacKenzie et al. 2019, 139).

[2] We read the presence of a vital New Materialism within the work of both Marder and Tsing. Within their respective theoretical frameworks, and in relation to their approaches to the vegetal, notions of agency and vibrancy are present. For Marder, decentering the human in the frame of a vegetal philosophy is central to an apprehension of 'plant-thinking,' and apprehension of the 'non-conscious intentionality of plants' (2013b, 124). In the work of Tsing, this agentic recognition illuminates 'the romance connecting people, plants, and places,' a connectivity within which plants are agents (2012, 145).

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Biographies

Chantelle Mitchell and Jaxon Waterhouse are researchers and writers from so-called Australia, working across academic and contemporary arts settings through their research project Ecological Gyre Theory. Together, their work has appeared in *un Magazine, e-flux*, *art+Australia*, and *Unlikely Journal*, with other publication outcomes currently under peer review, and chapters for publications with Bloomsbury forthcoming in 2022. They have presented their work at conferences nationally and internationally, and exhibited their work in Australian artist run spaces. Most recently they have presented through Macquarie University, the international Temporal Belongings, STREAMS and Atmospheric Humanities conferences, and the Australian Centre for Contemporary Art for the Writing&Concepts series—although COVID-19 has disrupted a number of further forthcoming engagements in Sweden, Norway, Greece and Finland. They have shown their work at Sawtooth ARI, Launceston (*deluge*, Jan – Feb 2020) and have taught their writing and practice focused curriculum 'Abyss Lessons' through Bus Projects in 2020. 2021 sees exhibitions at Spectrum Gallery (W.A.) The University of Melbourne (VIC), Sawtooth ARI (Tas) and FELTspace ARI (S.A.), alongside further practice based outcomes in 2022. They are currently guest editors for Issue 8 of *Swamphen: a journal of cultural ecology*.

Chantelle Mitchell lives on unceded Wurundjeri Country. She has written for Stilts Journal, Heart of Hearts Press, Plumwood Mountain, the Lifted Brow and Marrickville Pause, and presented performance lectures for ACCA, the Ian Potter Museum, Bus Projects and Free Association. Chantelle maintains a research-based practice with Jaxon Waterhouse, which has seen them present their work through Macquarie University, the Australian Centre for Contemporary Art, the international Temporal Belongings, STREAMS and Atmospheric Humanities conferences. Their written work has appeared in *unMagazine*, *e-flux, art+Australia* and *Unlikely Journal*, and they have presented numerous exhibitions in artist run spaces across Australia.

Jaxon Waterhouse is a writer, publisher, and artist living on unceded Ngarluma Country in regional Western Australia. He is the editor of Heart of Hearts Press, which has seen numerous publications and artist books between 2020 and 2021. In 2021, he presented the immersive digital artwork, *Quest for the Night Parrot*, alongside numerous exhibitions across Australia. Jaxon maintains a research based practice with Chantelle Mitchell which has seen them present their work at a number of national and international conferences. Their written work has appeared in *unMagazine*, *e-flux, art+Australia* and *Unlikely Journal*, and they have presented numerous exhibitions across Australia.

PERFORMANCE PHILOSOPHY

ALGAE SYMPOIESIS IN PERFORMANCE: RENDERING-WITH NONHUMAN ECOLOGIES

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In the following article, I develop the concept of 'rendering-with algae' as both a practical and conceptual tool for investigating how algae agencies transform bodies and environments through a series of performance experiments. I explore embodied ways of making-with algae as collaborators in performance practice that seeks to address processes of ecological destabilization as matters of combined human and nonhuman agency. This work relates to a wider body of PhD research, which investigates transformative relations between algae-human bodies and environments as matters of cooking in performance through an ecodramaturgical method. Performance scholar Lisa Woynarski theorises how ecodramaturgy operates beyond traditional theatrical forms as an analysis of performance more broadly that connects ecological thinking to the material world. She extends ecodramaturgy to 'thinking about meaning-making strategies, in a variety of performance forms in relation to ecology' (Woynarski 2020, 9–10). My embodied approach to ecodramaturgy draws on this theorisation and explores material and narrative threads of relation between algae, human and nonhuman bodies and environments, through a variety of fields of research and practice, with the aim of forging new creative ways of working with nonhumans in performance. This research builds on performance scholarship and practice at the intersection of performance and ecology (Kershaw 2009; Bottoms 2012; Woynarski 2020; Arons and May 2012; Lavery 2015; Donald 2016, 2019). I also draw on scholarship in fields of new materialism and posthumanism (Alaimo 2010, 2016; Bennett 2010; Barad 2003, 2007, 2010; Haraway 2008, 2016) to develop what I propose as an embodied ecodramaturgical and sympoietic approach to collaborative algae-human performance research.

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Throughout this article, I consider Donna Haraway's concept of 'sympoiesis' aligned with my embodied approach to ecodramaturgy. Haraway proposes sympoiesis as a process of 'making-with' nonhumans across a range of interdisciplinary practice that reflects on the ecological interdependencies demonstrated by biological systems such as 'cells, organisms, and ecological assemblages' (2016, 60). In a similar vein, ecodramaturgy theorises the work of intersecting practices from fields of performance and ecology that highlight how material relationships inform stories around changing ecologies. Performance scholar Teresa J. May (2017) draws on Haraway's theorisation of sympoiesis to argue that the term ecodramaturgy encompasses practices which have 'spun counter narratives and invented alternative forms that resisted environmental and cultural imperialism by exposing its mechanisms, amplifying the voices of those places and peoples it has silenced or ignored, and advocating ecological reciprocity between and among land and people' (1). May posits ecodramaturgy as a mode of performance analysis and practice concerned with reciprocities between bodies and environments. In foregrounding ecological reciprocities between humans, algae and environments, this article seeks to uncover alternative practices to the representations that render algae bodies as silent commodities.

Between October 2015 and September 2019, I embarked on a series of performance encounters and experiments with algae organisms. These encounters occurred across numerous sites, spaces and times from mountaintops in the Lake District to gardens in South London, intertidal zones in Norway and old growth forests in Finland. Engaging with algae ecologies through multisensory embodied inquiry became a process of opening myself up to a field of perception beyond the human and at the same time delving into the fabric of what drives my own creative practice. As creative collaborators algae might seem an unlikely choice and, at the start of the research process, I found myself grappling with taxonomies in an attempt to unlock an approach to working with them in practice. I became immersed in a world of scientific literature and discovered their vital role in diverse and interconnected ecologies. Algae are fundamental to earth's planetary ecology; collectively, they produce over half of earth's oxygen, compose expansive habitats, act as a vital food source for multiple species and sequester vast amounts of carbon from earth's atmosphere (Brodie 2017). I discovered there are more than seventy-five thousand species of algae encompassing both micro and macro varieties, the latter being more commonly known as seaweeds, and that these organisms inhabit every environment on earth from oceans, rivers and lakes to glaciers, sediment, rocks and trees. They even grow on human teeth.

Algae-human relationships extend from everyday encounters breathed in air, ingested as food and witnessed as patches of green on fences or walls, to invisible connections with ancient algae deposits that are extracted as fossil fuels, drive global capitalist economies and are entangled with cycles of carbon that contribute to global warming. I propose that these entanglements highlight an ecodramaturgical perspective on anthropogenic climate change that reveals the effects of how carbon is digested as food and fuel by human and nonhuman bodies to generate and transform life on earth. Despite their crucial role in earth's ecosystems, algae organisms are frequently overlooked as agents whose photosynthetic capacity makes life on earth possible. Instead, like much nonhuman existence, the binaries of Western thinking often relegate these beings to the realm of capitalist commodities where forms such as spirulina are labelled as 'health foods' and

others are 'harmful algal blooms' when they resist becoming products for human consumption. Exploring a diverse range of algae lifeforms throughout my research challenged me to rethink forms of multispecies existence that are inextricable from environments. This article discusses the first phase of my research into 'cooking-with algae,' through the method of 'rendering.' I consider algae as collaborators in this work, whose stories and material ecologies sediment concepts such as 'algae rendering' and compose the threads of my thinking through embodied performance practice. The following article attempts to articulate how working-with algae has shaped my perception of ecological relationships, along with my artistic practice, in ways that continue to develop through an ever-changing dance of agencies with these 'plant-like' beings.

Part 1: Rendering *Pharmakon*

In culinary terms, 'To render' means 'To melt down (fat) in order to clarify it. Also: to obtain or extract (fat) from meat, an animal, etc., by heating' (OED 2009). Taking this term as a methodological starting point, my research aimed to break down the traditional culinary concept of 'rendering' and rework it beyond anthropocentric narratives of consumption through embodied ways of thinking and making with algae. To establish a departure from anthropocentric culinary 'rendering,' I drew on further definitions of 'rendering' as a verb, where 'to render' means 'to express or represent' and 'to cover (stonework, brickwork, etc.) with cement or a similar material; to paint (an external wall) with render' (ibid). These last two meanings of 'to render' developed through embodied encounters with cyanobacteria[1] algae, during which I witnessed lichens[2] covering fences, walls, rocks and trees, alongside theoretical investigations into cyanobacteria ecology, particularly algae blooms across the surface of bodies of water. This attentiveness to everyday encounters with cyanobacteria was inspired by what Anna Tsing (2010) calls the 'art of noticing,' where one becomes open to the nuanced ways that beings are bound together in a web of relations.

What I term 'algae rendering' in this article operates as a mode of material relation between algae and environments, in contrast to anthropocentric, utilitarian, representations of algae as 'harmful' or 'healthy.' 'Algae rendering' also draws on philosophical considerations of 'rendering' as a process of nonhuman performativity[3] and reflects on how material embodied relations are translated into narrative representations of algae. Anthropocentric definitions of algae as 'healthy' or 'harmful' reveal how language and taxonomic categories are entangled with material effects but, crucially, how these effects are filtered through an anthropocentric lens. Derrida's (1981) concept of the 'pharmakon' reveals the relationship between language, matter and meaning in ways that highlight anthropocentric binary oppositions such as nature/culture and poison/remedy. For example, Derrida states that the pharmakon, 'constitutes the medium in which opposites are opposed, the movement and the play that links them among ourselves, reverses them or makes one side cross over into the other (soul/body, good/evil, inside/outside, memory/forgetfulness, speech/writing, etc.)' (1981, 130). The concept of the 'pharmakon' is useful to my ecodramaturgical research method, as it reveals anthropocentric tendencies to create binary oppositions, which are inextricable from each other. The pharmakon of 'algae rendering' is a further conceptual tool that

extrapolates and produces different ecological relations between algae and human bodies and environments in modes of performance practice which are explored further in this article.

Algae cross species divides between plant and animal, often defying straight-forward taxonomic classification and highlighting alternative modes of multispecies being. For example, forms of cyanobacteria that live as symbionts in partnership with fungi to become lichens or the zooxanthellae algae that live within the tissue of coral reefs. Seaweeds are perhaps the most 'plant-like' group of algae beings, but they also encompass forms that appear more mineral such as coralline algae that grow on rocks and coral reefs. My 'rendering' encounters and experiments engage with algae through different co-constituting agencies, alongside modes of transformative human-algae ecological relation, rather than taxonomic classification alone. Taxonomy and species categorisation highlight the anthropocentric role of language in nonhuman representation, particularly when the materialities of certain algae blur taxonomic divides between plant or animal species, yet nonetheless they are put in specific linguistic boxes. The arbitrary division of algae according to taxonomy alone is part of anthropocentric, linguistic, representation that disregards their different material effects, particularly when so many complicate and blur the lines of categorisation through their relations and modes of material being. Gilles Deleuze elucidates this thinking in terms of how radical differences between beings determine multiple effects when he states, 'Bodies are not defined by their genus or species, by their organs or functions, but by what they can do, by the effects of which they are capable' (Deleuze & Parnett 1987, 60). What I term 'algae renderings' intend to move beyond taxonomy and investigate how the language used to describe algae can also consider their ecological entanglements through modes of material relation.

The group of algae organisms classified as cyanobacteria, commonly known as blue-green algae, encompasses a variety of single-cell micro-algae from freshwater to marine species. When I first encountered cyanobacteria, I observed them as colourful spatterings of blue-green on walls, fences, trees and pavements. These material ecological co-relations between cyanobacteria and other organisms and environments inspired new ways of working with them in my creative practice and a curiosity about their role in different ecosystems. Cyanobacteria cover almost every terrestrial and aquatic environment on earth from soil layers to glaciers and oceans (Vincent 2007). In occupying these environments, cyanobacteria exhibit similar characteristics and create large 'blooms' on the surface of water, ice, rock or snow (Seckbach 2007). Cyanobacteria species also embody dual anthropocentric representations that label them as either 'healthy' or 'harmful' (Brodie & Lewis 2007; Margulis 1981; Round et al. 1990). In one thread of scientific analysis, cyanobacteria are described as the organisms responsible for producing the atmospheric changes necessary for life on earth to develop. For example, the pioneering evolutionary biologist Lynn Margulis (1981) hypothesized that cyanobacteria were responsible for first producing oxygen in earth's atmosphere. Margulis states that a global oxidization event occurred on earth when one type of cyanobacteria algae absorbed another micro-organism containing chlorophyll into their bodies thus enabling them to photosynthesize through a process of partial digestion called endosymbiosis.[4] Haraway (2016) draws on Margulis' work on endosymbiosis to highlight the enfolding and interweaving of different modes of ecological relation evident in the concept of

sympoiesis. Haraway (2016) states that, 'Critters interpenetrate one another, loop around and through one another, eat each other, get indigestion, and partially digest and partially assimilate one another, and thereby establish sympoietic arrangements that are otherwise known as cells, organisms, and ecological assemblages' (58). Considering material algae ecologies through the lens of sympoiesis also highlights the ecodramaturgical method of this research, which means to uncover, digest and breath-in different forms of algae through encounters and stories about their role in earth's changing environments.

The environmental effects of different forms of cyanobacteria determine whether they are regarded as 'harmful' or 'healthy' by humans in terms of their impact on wider ecologies. For example, cyanobacteria are also described as 'harmful algal blooms' (HABs), when they are damaging to economic productivity and interfere with modes of human food production. I propose that these representations are anthropocentric 'algae renderings,' forms of algae representation and consumption by humans that emerge through specific material encounters of rendering that are inscribed within a wider politics of capitalist consumption. In this sense, cyanobacteria algae demonstrate a 'pharmakon' of anthropocentric 'algae renderings' that labels them according to binary logic as 'healthy' or 'harmful' in terms of how their effects impact humans.

Feminist science studies scholar Astrid Schrader (2012) reveals how anthropocentric representations of algae reveal a complex web of entanglements between human and algae bodies. Schrader unravels links between how algae are described pejoratively as 'Harmful Algal Blooms' (HABs) and a wider politics of representation that inscribes ecosystems with human utilitarian values. In response to humans labelling these algae as 'harmful,' Shrader asks "to whom?" (ibid) aptly highlighting how the language used to describe nonhumans so often depends on anthropocentric logic. Schrader also explains how human activity is inextricable from the causes and effects of these blooms. She writes, 'In order to reproduce, algae need not only sunlight but also nutrients such as nitrogen and phosphate. Agricultural run-off containing plant fertilizers and waste from industrial animal farms have supplied coastal waters and estuaries with a large dose of these nutrients' (2012, 77). Industrial farming creates nutrient-rich coastal waters for algae, materializing further environmental impacts on ocean ecosystems in the form of HABs that interfere with the fishing industry. Larger organisms in the ecosystem, such as fish, suffocate as a result of the blooms, causing a loss in productivity from potential 'food energy' (Diaz and Rosenberg 2008). HABs are considered 'harmful' because certain forms are damaging to economic productivity, which create losses in the commercial fishing industry and a decline in coastal tourism. Therefore, the causes and effects of algae blooms are entangled with the ecological and economic impacts of capitalist production that are designed to maximize food production for human consumption. Systems of human food production and consumption are entangled in a politics of representation that labels the nonhuman ecologies responding to anthropogenic environmental change as 'harmful,' inscribing ecologies in anthropocentric discourse.

Schrader (2012) considers how additional financial investment is being made to create new modes of ecosystem adaptation in environmental monitoring systems that can predict cyanobacteria blooms and their 'harmful' economic impact. This act of algae monitoring is reflective of the wider

capitalist politics underpinning environmental change with the potential to further impact ecosystems according to the anthropocentric logic of capital and consumption. Schrader elucidates this point stating, 'as the algae species become reduced to a series of genes or chlorophyll content that can be quickly quantified, the speedy detection of their harmfulness come to embody and materialize the very anthropocentrism assumed in the notion of "harmfulness"' (87). Cyanobacteria are forms of algae that often create these blooms and are commonly linked to the impacts described as 'harmful.' An ecodramaturgical lens on HABs, in terms of algae rendering, reveals how cyanobacteria blooms that emerge as coverings on the surface of watery environments, in response to higher nutrient levels from industrial farming, are inscribed with the material effects of anthropogenic environmental change and perpetuate this cycle. I propose that material-discursive frameworks of 'algae rendering' highlight the ways in which human-algae ecologies are entangled in a politics of anthropocentric representation and consumption that are transforming environments.

Spirulina are forms of cyanobacteria that expose a different set of ecological relations and thus reveal another side of the 'pharmakon' of algae-human relations in which algae become either poison or remedy according to the binary logic of 'healthy' or 'harmful.' Western capitalist representations label spirulina algae as 'healthy' based on their viability as products in the form of health food supplements with combined ecological and economic effects. In contrast to HABs, spirulina are valued as a 'health food' and were first introduced to the US health food market as a high-protein and detoxifying food supplement in 1979. These algae were labelled a 'food of the future' in the 1980s owing to their potential as a sustainable food resource and by the mid 1990s there was a global market for algae food supplements and new commercial algae farms were developing across the world (Henrikson 2010). Algae are currently farmed commercially for biofuels, food, aquafeeds for agriculture and are also being used in sustainable design. Increasing financial investment and research into the 'green' potential of algae is being made to combat issues of food and fuel shortages as a result of climate change. These examples of 'algae rendering' as products highlight human-algae relations that commodify algae as part of a capitalist economy that perpetuates cycles of nonhuman consumption. These algae renderings reveal the logic of capitalism through which the economic viability of cyanobacteria as human 'health' products fuels production and consumption of certain forms of algae as commodities and how these processes in turn are perpetuating an increase in the devastating effects of climate change.

Representations of algae as 'harmful' or 'healthy' reveal the ongoing materialisation of algae-human relations that are often dependent on the logic of Western capitalist systems of human commodification and consumption. The concept of 'algae renderings' demonstrates how ecological relations between algae beings and environments compose and recompose each other through representations that materialize in different ways. At the same time, the 'pharmakon' highlights the entanglements through which 'algae renderings' operate in terms of a combination of discourse and material effects driven by anthropocentric language that both relies on and generates binary logic. The 'algae renderings' described in this first part encompass surface coverings of algae on bodies and environments as well as representations of algae through language that reveal an anthropocentric 'pharmakon' which further generates cycles of nonhuman

consumption. Together, these notions of 'algae rendering' and the 'pharmakon' demonstrate a web of nonhuman performativity intertwined with human systems of meaning-making and capital that are performative of changing environments.

These changing environments demonstrate what Karen Barad outlines as nonhuman performativity, where all bodies, human and nonhuman, emerge as agential through material-discursive practices that produce differences between them (2003, 810). Barad's formulation is crucial to how I consider modes of 'algae rendering' as the material ecological transformation of bodies and environments, which are inextricable from anthropocentric representations and the effects of climate change. Different configurations of cyanobacteria 'algae rendering' described in this first part emerge through what Barad terms 'spacetimematterings,' defined as, 'the ongoing rematerialisings of relationalities, not among pre-existing bits of matter in a pre-existing space and time, but in the ongoing reworkings of "moments," "places" and "things"—each being (re)threaded through the other' (Barad 2010, 268). This article itself constitutes an example of anthropocentric algae rendering through language that is continually shifting in the process of writing and reflecting on past research and experiments. My ecodramaturgical approach seeks to weave together different material and linguistic threads of algae-human ecology in order to engage with how language itself shapes many of the paradoxes of anthropocentrism that inform my attempts to move towards collaborative ways of working-with algae. To grapple with these ideas further, I began to explore material ways of working with algae in practice that follow on from this thinking and my embodied encounters with cyanobacteria. Embodied encounters with modes of 'algae rendering' inspired new ways of working with algae in practice that sediment knowledge of surface coverings of algae bodies in relation to my own. This next section presents images of these encounters and considers the applications of 'algae rendering' as a mode of performance analysis and practice.

Part II: Algae Rendering

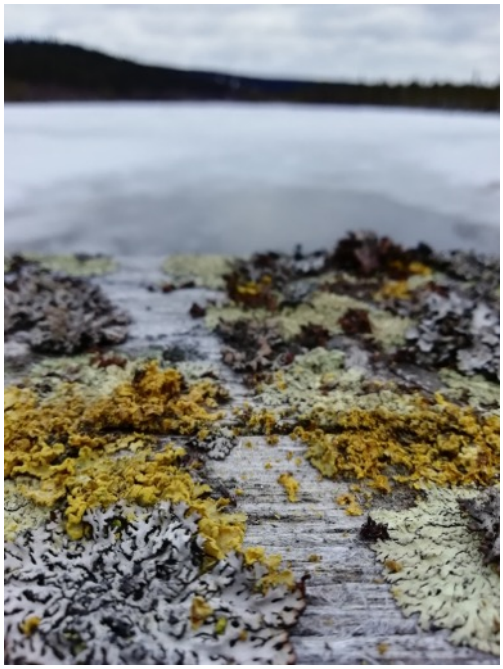
My encounters with cyanobacteria emerged in material forms through 'algae rendering' of environments. These forms of algae materialized through symbiotic associations with fungi as lichen on trees and rock. My investigation into material examples of 'algae rendering' is an attempt to consider modes of algae-environment relation that operate beyond the pharmakon of anthropocentric representations as 'healthy/harmful.' I began by observing how algae generate a visible transformation in the composition of a body or environment by forming a covering on the surface. I observed these examples of 'algae rendering' through my encounters with cyanobacteria, which appeared as patterned surface coverings of lichen on trees, rocks and fences in various locations throughout the duration of my research. I continue to wonder at the sight of these familiar flashes of green.

The following is a selection from a series of images taken on my mobile phone during encounters with cyanobacteria in forms of 'algae rendering.'

Encounters with Algae Rendering:

Redhill, Surrey, UK 2017

Brigsteer, Cumbria, UK April 2018



Paljakka reserve, Kainu, Finland, April 2019

Stonehenge, Wiltshire, UK July 2019

These encounters with cyanobacteria generated a further aspect of ecodramaturgical inquiry into how my interpretation of 'algae rendering' could be applied to the analysis of other artists working with algae. An example of this notion of 'algae rendering' in practice is an installation artwork by Helen and Newton Harrison (1971) entitled *Notations on the Ecosystem of the Western Salt Works with the Inclusion of Brine Shrimp (Shrimp Farm)*. The work was composed around ecosystem interactions between the micro-algae *dunaliella*, the brine shrimp *artemia* and salt water. The installation involved four connected tanks filled with water, dunaliella algae and different amounts of salt; brine shrimp were then added to each tank. In hypersaline water environments where there is a high salt content, dunaliella produce an organic chemical in the form of a carotenoid as a reaction to the salt. The brine shrimp digest and synthesize carotenoids from eating the algae that contain this pigment, which gives their bodies a pink-orange colour.[5] Over the course of the production of the artwork, Helen and Newton Harrison added increasing amounts of salt to each tank. The algae continued to photosynthesize and produce more carotenoids in response to the salt content of the water. This created a transformation in the colour of the four tanks from blue-green to pink and red in a colour spectrum of carotenoid-producing algae. The artwork formed an ecological feedback loop that is characteristic of what art critic Jack Burnham describes as 'systems aesthetics' (Burnham 1974), which highlights the tenets of technological and organic entanglements between beings and environments. The Harrisons' artwork represents algae and brine shrimp ecological relations through an installation that itself reproduces the ecosystem. This demonstrates another example of 'algae rendering' through the simultaneous imitation and reproduction of algae ecology in a form that creates a material transformation of the environment of the tanks.

Shrimp Farm is shaped by both human and nonhuman agencies in ways that demonstrate a multispecies approach to the creation of an artwork. Newton Harrison describes how the inspiration for the project came from a conversation about the ponds where someone from the museum that hosted the work described using algaecide to keep the ponds 'clean' from algae. The idea of cultivating a living artwork from organisms that the museum was trying to destroy was amusing to Harrison (Burnham 1974). This example highlights another aspect of the pharmakon of algae-human relations that I propose depends on different anthropocentric representations of algae ecology; the project challenged the anthropocentric ideology of the museum by celebrating the algae. The Harrisons envisaged the final phase of *Shrimp Farm* as a performance, where the shrimp would be the main ingredient in a performative feast that marked the end of the exhibition. Newton Harrison describes the final act of eating the artwork after the exhibition:

> The taste was appalling, with a slightly rotting, crunchy, and extremely salty algae-like flavor. I tried making a shrimp soup. Adding capers made the broth a little better. Anchovies made it possible to take a taste, but nobody wanted a mouthful. In a last-ditch effort I mixed the shrimp, capers, and anchovies in a blender, then added chopped chili peppers to make it a bit spicy. During performance mode at art parties, people felt somewhat obliged to taste a dollop on a cracker- but no one asked for seconds! (Newton Harrison 1971)

Harrison articulates how the final staging of this algae ecology involved serving the shrimp as food for human consumption. However, the algae and shrimp disrupted the envisaged plan for the work

because of their combined flavour. The algae and shrimp formed a chimeric relationship as artwork and food for human consumption but at the same time were unpalatable. This chimera disrupted human mastery over the outcome of the work as the nonhumans were inedible through the very process by which the Harrisons intended to render them as human food, thus nonhuman agencies changed the ecology of the work from a system of human food production to one of algae transformative relations. There is a similar dynamic evident in this artwork as there is in HABs, where methods of industrial farming produce the conditions required for algae blooms to grow to an excess and interrupt the fishing economy; one mode of human production and consumption interferes with another. The intention of the artwork to eventually become a system of human food production might challenge the notion of algae as collaborators within the work. However, the combined agencies of algae, shrimp and humans together generated the material transformations that created the work.

Shrimp Farm demonstrates another example of what I propose as 'algae rendering' through a multispecies approach to artistic practice, where material ecologies of algae bodies and environments visibly transform an environment in ways that reveal combined forces at work. Algae renderings in this example emerged as a visible transformation in the environment through the materialisation of algae relations, which changed the colour of the tanks and illustrated algae agencies in action. The reciprocal dynamic between the ecosystem and visible changes in the colour of the water show the overall ecology of *Brine Shrimp* was co-created by the algae, salt, shrimp and Helen and Newton Harrison.

Part III: Rendering-with Algae

My embodied encounters with cyanobacteria 'algae rendering' led to a series of practical experiments that investigated ways of working with algae led by algae material relations. The experiments explored principles of 'algae rendering' as the agential capacity of algae to transform bodies and environments as a surface covering that emerges through ecological relations. My approach aimed to develop a collaborative human-algae framework that moved beyond anthropocentric binary definitions of algae as 'healthy/harmful' or as products for consumption and I term this way of working 'rendering-with algae.' I used paint as both a form and medium for embodied exploration of 'rendering-with algae' in terms of how algae ecological relations transform the surface of different environments. Barad reminds us that concepts and material practice compose each other. She writes, 'Concepts do not refer to the object of investigation. Rather, concepts in their material intra-activity enact the differentiated inseparability that *is* a phenomenon' (Barad 2010, 254). This principle of material-discursivity is intrinsic to the framework of 'rendering-with algae.' For example, Derrida writes, 'In Greek, *pharmakon,* also means paint, not a natural color but an artificial tint, a chemical dye that imitates the chromatic scale given in nature' (1981, 132). Derrida's illustration hinges on Plato referring to painting as a pharmakon in the *Phaedrus*, which he later parallels to writing in terms of how both function as expressive mediums. Drawing ecodramaturgical and sympoietic threads between linguistic and material encounters

with ‘algae rendering’ developed into experiments with forms of painting that further explored combined human and nonhuman agencies at work in practice.

These experiments aimed to avoid anthropomorphising the algae as painters or objectifying them as paint but instead attempted to explore the agential and transformative relations that emerge between algae and environment. These ‘rendering-with algae’ experiments explored bodily meeting points where matter and meaning combined in terms of how human and algae bodies operate in dynamic material forms of co-relation, rendering each other. Haraway reminds us that ‘if we appreciate the foolishness of human exceptionalism then we know that becoming is always becoming with, in a contact zone where the outcome, where who is in the world, is at stake’ (Haraway 2008, 244). The following experiments involved improvised site-responsive movement scores with algae paint and aimed to forge new connections between myself, algae and environment.

Rendering Experiment 1: Render Dance 1

Render Dance 1 was devised and performed in an area of woodland in Brigsteer, Cumbria in April 2018.

I devised the experiment as a dance of human and nonhuman agencies that materially linked each action to wider ecologies of ‘algae rendering.’ In *Render Dance 1*, I performed a site-responsive dance using algae paint made from combining spirulina, seaweed and lichen. My movements re-marked ‘algae rendering’ processes, where algae cover the surface of different environments, and generated new relational ecologies between my body, tree and soil. The paint marked contact points between my body and its environment, rendering my body in algae paint. I improvised movement in response to changes in the air temperature and textures of leaves underfoot and shifted my weight between contact with the tree and ground.

After the experiment, I photographed impressions left by the algae renderings on my body. The following is a series of images taken once the paint had dried to form new modes of ‘rendering-with algae.’

Render Dance 1 translated acts of 'algae rendering' into new forms of making-with nonhuman ecologies. The term 'rendering-with algae' describes the ecodramaturgical process of making-with algae through new modes of rendering that are performative of algae ecological agencies. There is an aspect of algae performativity in which new material relations between my body and algae emerged through practice in dialogue with the performative ways that algae transform bodies and environments. Through an ecodramaturgical lens, algae are performative of ecological transformation in *Render Dance 1* through the medium of paint and through the movement of human and nonhuman bodies, which imitates algae material ecologies but also generates new material relations with algae.

'Rendering-with algae' exhibits modes of entangled ecological relation between human and algae bodies, environments, matter and meaning that are performative of continually shifting ecological connections, which are re-written throughout *Render Dance 1.* This way of working is also informed by Karen Barad's theory of 'intra-action' (2003, 2007), which demonstrates entangled modes of being and relating to the world. Barad's theory of intra-action draws on Niels Bohr's (1963) quantum physics insights to propose that beings do not precede their relations but are in constant modes of becoming. These dynamics are integral to 'rendering-with algae' as a material-discursive approach to performance that explores relationality as a continuous process of becoming-with through different acts of rendering. Crucial to Barad's theory of intra-action is the concept of the 'apparatus,' again developed from Bohr's experiences working in the laboratory. Barad (2007, 140) explains that apparatuses are both methodological tools and modes of practice through which material-discursive phenomena emerge.

In *Render Dance 1*, the limits of what might be termed 'apparatus' are inscribed through the actions of the experiment and how they facilitate the operation of 'rendering' as an unfolding of different ecological relations between algae, human and nonhuman bodies. Barad explains how 'intra-actions include the larger material arrangement (i.e., set of material practices) that effects an agential cut between "subject" and "object"' (2007, 148).[6] This shift between subject and object in *Render Dance 1*, through contact between humans, nonhumans and environment establishes a dance of agencies, which is performative of the transformative capacities of algae. Human and nonhuman bodies were rendered by the algae and inscribed with new forms of connection between algae and environment. Traces of the algae paint decomposed after experiment as nutrients for the soil so that the boundaries of the dance continued to shift. Apparatuses, according to Barad, 'are not mere observing instruments, but *boundary-drawing practices*—specific material (re)configurings of the world—which come to matter' (140). The apparatus of 'rendering-with algae' developed through an embodied ecodramaturgical approach to performance that is performative of ecological co-creation and meaning-making between humans and algae.

Rendering Experiment 2: Render Dance 2

Render Dance 2 was devised and performed during a residency with Singing Apple Press in Mere, Wiltshire, in August 2018. I developed the experiment from *Render Dance 1* with the aim of exploring how painting also becomes a form of writing relations with algae. I considered how the

material of the algae paint, in connection with my body, performed a mode of re-writing algae-human ecologies as an alternative to the pharmakon of anthropocentric binary renderings of nonhumans through language. *Render Dance 2* was composed of the same elements as the first dance with the addition of three pieces of blank paper around the base of an apple tree. These blank pieces of paper were marked with algae paint at different stages in the experiment through gestures and movement in combination with my body, the soil and tree. After the dance, I lay still and let the paint dry on my skin in the sun. Traces of the algae paint were left on my body, the tree, paper and soil. The drying process viscerally sedimented an embodied understanding of rendering in a layer of algae paint that I felt tighten and crack on my skin. After the experiment, I photographed the impressions left by the algae.

The following is a series of images taken during the experiment *Render Dance 2* and after the paint had dried to form new modes of 'algae rendering.'

In *Render Dance 2,* I began to consider how the algae paint became a second skin for my body through contact with the nonhuman bodies of the tree and soil. Stacy Alaimo claims that to effectively challenge the system of dichotomies that sever nature from culture, it is important that the body be not just a place that has been inscribed by cultural forces but a threshold where nature and culture dissolve, a rhizomatic place that connects 'desperate distances' through elemental relations (Alaimo 2012, 137). Alaimo declares that in order for the human constructed nature/culture divide to be abolished we must begin to rethink the way we understand skin and the body. The skin is a liminal space, a contact zone, porous membrane, organ and ecosystem through which the body senses the world. Alaimo also problematizes what might be described as a further anthropocentric divide between 'body' and 'environment,' stating that, 'the substance of the human is ultimately inseparable from the "environment"' (Alaimo 2010, 2). In this sense, the divides between body and environment remain fluid within this work and boundaries are drawn at different points in the practice to highlight how these continue to shape each other through different relations. The apparatus 'rendering-with algae' attempts to bridge binaries through a process of reciprocal transformation between human and nonhuman bodies and environments that reveals how algae are active ecological agents and collaborative creative subjects.

Both *Render Dance 1* and *Render Dance 2* explored acts of 'rendering-with algae' through painting and movement in site-responsive work. These practical experiments sought to investigate the material ways that algae transform bodies and environments in a new interplay of algae-human agencies in creative practice, in contrast to the pharmakon of anthropocentric binary renderings of algae through language. For example, defining algae in terms of their utilitarian function as either healthy/harmful works in conjunction with taxonomic categorisation that labels beings according to a system that disregards material agency in favour of bodily characteristics. As a counter to these dominant systems of nonhuman representation, I devised rendering-with algae as a mode of creative encounter to explore algae agencies in acts of material transformation. These embodied acts of rendering-with algae also transformed my understanding of how algae are performative of ecological change across different scales.

The algae were agents in the creative practice and also contributed to the knowledge-production process through the meaning generated in each experiment. Natasha Myers elucidates an approach to rendering that informed my experiments, emphasizing once again how matter produces meaning. Myers investigates the work of a group of molecular biologists working on a form of protein molecule modelling called 'crystallographic rendering' and refers to the complex 'ontological choreography' of the scientists in the laboratory to describe how rendering can be understood as intra-active performative practice. Myers states that, 'Renderings are not just performances; they are also performative' (Myers 2015, 19). Myers' analysis of 'rendering' as performative describes how the scientists interpret and translate protein molecule bodies from one form into another, sometimes imitating the form of the molecules with their own bodies as well as working with technology to create computer-generated models, thereby producing a range of different entities through understanding the form of nonhuman bodies. The apparatus 'rendering-with algae' explored improvised movement and painting with algae bodies as a dance

of mattering, movement, agency and affect between humans and nonhumans, which became performative of new material modes of ecological transformation of bodies and environments.

Myers' example emphasizes how the work of the scientists is iterative as well as how the agencies of the nonhuman protein bodies shape the work of the scientists. The rendering of bodies in Myers' example occurred through human embodied translation and imitation of nonhuman bodies, which generated new models of the protein structures as digital renderings. Myers explains that in computer modelling, rendering is the process of outlining an image to make it appear 3D. She writes, 'a model is a rendering in the sense that it embodies, performs, and sediments a modeler's form of knowing. In the making, models are inflected with the affects of their modelers, and these inflections engender further effects as models are put into circulation' (133). My experiments in 'rendering-with algae' also revealed this, where a new model of algae ecology developed through my interpretation and imitation of the principles of algae ecology. This interpretation in turn became embodied knowledge that I performed as algae-human ecological relations, which generated new algae-human bodies and insights into algae ecological relationships. These experiments sedimented new forms of knowing and being with algae through performance, which I propose highlights an embodied ecodramaturgy that connects ecological ways in which algae are performative of changing ecologies with the mediums of movement and painting as principles of 'rendering-with algae.'

'Rendering-with algae' developed as an apparatus for performance making-with algae through research, embodied encounters and observation as ways to creatively explore how algae transform bodies and environments. Through an ecodramaturgical approach to engaging with theoretical and practical aspects of 'algae rendering,' these experiments developed new configurations of algae-human performance. After conducting these experiments, I began to explore potential new narratives that could expand ways of thinking about 'algae rendering' at a time of climate change. In turn, this work loops back to earlier considerations around the role of language in shaping human-nonhuman relations, specifically how 'rendering-with algae' could be regarded as an apparatus or material-discursive tool for performance practice which also highlights issues around nonhuman representation.

Part IV Algae Sympoiesis

In this final part, I consider how my embodied ecodramaturgical approach to rendering-with algae generates what I propose as a theory of 'algae sympoiesis' in performance. Haraway states that, 'Sympoiesis is a word proper to complex, dynamic, responsive, situated, historical systems. It is a word for worlding-with, in company' (Haraway 2016, 58). 'Algae sympoiesis' is the synthesis of the embodied ecodramaturgies of this algae-human performance research, and the links between algae material relations and narratives that have emerged through exploring 'algae rendering,' to produce new relationships between human, nonhuman bodies and environments. Algae sympoiesis is ecodramaturgy in practice that brings together principles of 'algae rendering' and practices of 'rendering-with algae' to reveal new ways of thinking about the combined human-algae agencies impacting climate change. The following stories bring together these aspects of inquiry

and invite further thinking about how entangled narratives and materialities of algae rendering are performative of environmental change in wider ecologies.

In a *Guardian* article (dated 6 July 2020), the headline reads: 'Algae turn Italian Alps pink, prompting concerns over melting' (Agence France-Presse 2020). The piece explains how a group of scientists in Italy are investigating the appearance of pink glacial ice in the alps caused by algae 'that accelerate the effects of climate change' (ibid). It goes on to explain that *Anclyonema nordenskioeldii* algae are responsible for the melting ice. Several other news organisations also reported on the story. The phenomenon described is a process by which algae blooms on the surface of ice sheets absorb the sun's rays and increase the rate of melting. The blooms themselves are caused by rising temperatures owing to anthropogenic climate change. This phenomenon exemplifies a form of 'algae rendering' that I have formulated throughout this article in which algae ecological relations materialise in ways that appear as the transformation of the surface of an environment. The rate at which snow ice absorbs or reflects sunlight is known as albedo quality and algae impact this in different ways, some of which can create carbon-absorbing blooms as well as causing the ice to melt. Algae organisms proliferate in warmer conditions caused by climate change. This feedback loop between the impacts of anthropogenic climate change and algae ecologies is symptomatic of changing conditions, which in turn both signals and materialises further ecological impacts, in this case through melting ice. The story, however, illustrates the anthropocentric algae rendering discussed at the start of this article, which paints a picture of the algae as the cause of environmental change. Biagio Di Mauro of Italy's National Research Council is quoted in the piece as saying that the scientists are 'trying to quantify the effect of other phenomena besides the human one on the overheating of the Earth' (ibid). This narrative, where algae cause the melting ice, highlights how anthropocentric representations of nonhuman ecologies can separate anthropogenic causes from their effects.

In another story of 'algae rendering,' an algae bloom transforms the surface of melting snow from white to bright green in Antarctica (Watts 2020). Research by a group of climate scientists from the University of Cambridge and the British Antarctic Survey published in *Nature* state that, 'Remote sensing reveals Antarctic green snow algae as important terrestrial carbon sink' (Gray et al. 2020). In this example, the algae have formed close bonds with fungal spores and bacteria, creating a new community and potential new habitat. The findings generate an 'algae map,' which the scientists claim could be the missing piece of the carbon cycle jigsaw, as the algae equate to a carbon sink of about 479 tonnes a year (ibid). The research also shows how blooms were found in areas that had experienced the most warming as a result of climate change. This sympoietic example reveals entanglements between examples of 'algae rendering' as the material transformation of an environment, anthropocentric algae renderings through which algae are represented and how these relations impact changing environments. In my research, acts of 'algae rendering' that materialize as algae blooms across ice sheets and increase the rate of melting, while simultaneously acting as carbon sinks, demonstrate the entangled ways in which algae modes of mattering impact wider ecologies of climate change. These material ecologies operate through a pharmakon of anthropogenic causes and effects, which also highlight how algae-human entanglements play a crucial role in earth's changing ecologies. Algae sympoiesis gets beneath the

skin of rendering to consider new worlds of co-creation and connectivity that are infused with the vibrancy of nonhuman agency; embodied ecodramaturgy that explores how humans and algae shape matter and meaning together through performance thus invites new thinking about the ways in which algae-human material ecologies are performative of environmental change.

Notes

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[1] A taxonomic group that encompasses single-cell, photosynthetic, organisms, commonly known as blue-green algae. Cyanobacteria are hypothesized to be some of the oldest lifeforms on earth (Margulis 1981).

[2] Lichens are symbiotic organisms composed between a fungus and cyanobacteria algae.

[3] I draw on Karen Barad's (2003) posthumanist understanding of this term to describe the role nonhuman agencies play in processes of materialization.

[4] Endosymbiosis is the process by which one cell partially-digests another, in this case plastids, which enabled early single-cell cyanobacteria to photosynthesize in combination with another cell.

[5] Dunaliella algae also form the main part of flamingos' diet, which makes these birds pink.

[6] Barad's (2007) notion of an 'agential cut' proposes a rethinking of subject/object as relational, which challenges the dualistic notion of the Cartesian cut that implies an inherent separation between subject and object. Agential 'cuts' reconfigure subject/object relations to reveal how differences between phenomena are made and emerge through encounters so that matters of being are inextricable from relations.

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Biography

Sarah Blissett is an artist, writer and dramaturg who recently completed her PhD in Performance Studies at the University of Roehampton. Her research explores an embodied ecodramaturgical approach to making-with nonhumans in performance. She is interested in how human-nonhuman ecological relationships can be theorised as matters of cooking in performance to highlight new narratives and materialities of environmental change. Her work has been published online with FEAST journal, Something Other and Whitstable Biennale. Recent projects include curating the 'Kelp Curing' research strand of the 2019 Kelp Congress in the Lofoten International Art Festival and an ongoing series of workshops with Modern Art Oxford titled 'How Nature Builds'. Sarah is a member of the Water Bodies collective.

PERFORMANCE
PHILOSOPHY

COLLABORATING WITH(IN) THE GARDEN: STEWARDSHIP, PERFORMANCE, AND THINKING BEYOND THE SPATIO-TEMPORAL FORMATIONS OF INSTITUTIONAL LEGACIES

CHRIS BELL UNIVERITY OF MINNESOTA

> *Mitákuye Oyás'iŋ* (we are all related) is at the core of our cultural beliefs, structures, way of viewing and walking in the world [...] Our belief in Mitákuye Oyás'iŋ, that we are all related, becomes true when all species have a healthy environment to live in, learn from and enjoy that is free from oppression and greed.
>
> —Cânté Sütá (Oglala Lakota), "Imagining the Oak Savannah" (2019)

Introduction: Gardens and Spatio-Temporal Formations[1]

Much has been made recently of Land-Grant—otherwise known as "Land-Grab"—legacies at institutions of higher education in the United States. The Morrill Act, passed by the United States Congress in 1862, created a network of Land-Grant institutions founded on the colonial settlement of lands, the extraction of resources, and the displacement of Indigenous peoples. This policy created the foundation for state-run public universities to develop financial reserves, generating a system of support that allowed for sustained infrastructural growth and research activity. Recent studies, such as Robert Lee and Tristan Ahtone's comprehensive research for *High Country News* (2020), have elucidated how Land-Grant policy incites a meta-narrative centered on settler notions

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of land, privileging legal and administrative processes that constrain and transform the formation of knowledge in relation to the environment. The emergent research and analysis illustrates how Land-Grant institutes have played a pivotal role in sustaining selves and societies within a settler-colonial meta-narrative of progress, an entangled and complicated history of making Indigenous lands available for extraction, settlement, and investment.

As a finishing doctoral student of German and Polish ancestry studying at a Land-Grant institution, I have been vexed by the structural contradictions inherent in my desire to develop as an ally to Indigenous causes, and my need to refract this desire through the protocols of knowledge production haunted by a colonial legacy. Conscious of this settler-colonial metanarrative, I've found myself needing a space beyond the typical university classroom as a means of interrogating institutional structures. For this reason, I have become especially interested in the pedagogical potential of gardens. Through my work on, in, and with gardens, I came to realize the degree to which knowledge production at my Land-Grant institution was so often defined through notions of productivity tethered to economic gain. At the same time, I see the pedagogical potential of gardens growing within and as a part of the curricula of Land-Grant institutions to provide generative critiques and experiential engagements with nature as embodied practices of caretaking.

Figure 1: University of Minnesota Native American Medicine Garden signage

At the corner of Cleveland and Larpenteur avenues in Saint Paul, Minnesota, across the street from the Bell Museum of Natural History and surrounded by University of Minnesota research fields, is a one-third acre garden of plants native to the Dakota homelands of *Mni Sóta Maḳoce*. Three quarters of the plot is formed in the shape of a medicine wheel, which is a traditional, spiritual concept for health and healing used by numerous Native American tribes in North America. On the east side of the medicine wheel is signage for the garden where one will commonly meet *pȟeží hóta wápe blaskáska* (ceremonial sage) growing near the posts. Within the medicine wheel is an arbor made from fallen branches. Within the arbor are several metal chairs for garden volunteers to rest. Surrounding the arbor are hundreds of plants indigenous to Mni Sóta Maḳoce: to the north is *pȟeží wačháŋǧa* (sweetgrass), to the west is an abundance of pȟeží hóta wápe blaskáska (ceremonial sage), to the east is *čhaŋlí* (North American indigenous ceremonial tobacco), and interspersed throughout is *pȟanúŋpala waȟčáȟča* (common milkweed).

The Native American Medicine Garden (hereafter, NAMG), located on the lands of the Dakota people ceded in the Treaties of 1837 and 1851, is a learning space that teaches and practices Lakota ways of living and being within the contemporary boundaries of a Land-Grant institution. Tawanciotawin Barbara Graham-Bettelyoun (Sicangu Lakota) initiated the garden as part of the Woodlands Wisdom project in 2003 within the administrative home of the medical school at the University of Minnesota. The initial work of the NAMG involved efforts to bring together a range of constituencies: tribal colleges and nations within the settler-colonial borders of Minnesota; University of Minnesota administration, faculty, staff and community; and non-Indigenous communities to support the work and to build alliances.[2]

In 2004, Tawanciotawin stepped away from the NAMG to found Buffalo Star People (buffalostarpeople.org), a grassroots movement to help Indigenous people heal from contemporary and historical traumas. In Tawanciotawin's place, Oglala Lakota Master Gardener and Landscape Designer Cânté Sütá Francis Bettelyoun was hired to implement the transition and to create a vision moving forward, serving as the garden's primary caretaker from 2007–2020. As explained in the personal documentation entitled "History of the University of Minnesota Native American Medicine Garden," Cânté Sütá has served as a staff member within the College of Food, Agriculture, and Natural Resources (henceforth referred to as CFANS), commuting from his home on Nakota homeland in South Dakota to "free the land of the oppressive state of being, an oppressive state that much of the land of the Dakota still suffers" (Cânté Sütá and Tawanciotawin 2018, 1). Despite inconsistent institutional support and financial uncertainty, Cânté Sütá nurtured a garden that included *pšíŋ šičámna* (wild onion), *chaŋȟlóǧaŋ hú waŋžíla* (small leaf pussytoes) pȟeží hóta wápe blaskáska (ceremonial sage), čhaŋlí (North American indigenous ceremonial tobacco), *wagmú* (Lakota squash), *waštémna* (wild bergamot), *kȟáŋta* (wild plum), *ápe kalúlu* (mallow), *waȟpé tȟotȟó* (lamb's quarter), and—of particular interest for this essay—pȟanúŋpala waȟčáȟča (common milkweed). Framed on all sides by meticulously managed research fields and pesticide warning signs, the common milkweed exemplifies how the garden—in the context of institutional relations—enacts stewardship as a multi-species performance with the capacity to mobilize acts of care in the present to imagine possible futures.

Figure 2: University of Minnesota research field and pesticide warning sign immediately to the east of the NAMG. Photo by author (2016).

The term "stewardship," like the term "performance," is expansive and used by researchers, practitioners, and policymakers variously to establish an ethics of engagement, to motivate publics, to organize action, and to assess potential outcomes (Enqvist et al. 2018). The term "stewardship" is also connected to a complicated legacy of landholdings, being widely used to describe a guardian of an environment or place who makes decisions *for* something/someone else rather than *with* something/someone else. As explained by Jennifer Welchmann, "Traditional stewardship, whether of estates, ships, passengers or finances, was a kind of occupation performed in return for financial or other remuneration and for a limited period of time" (2012, 299). Contemporary views on the concept of stewardship have shifted towards adaptation, emphasizing the need for epistemological agility and adaptation when addressing environmental concerns. In contrast to contemporary conceptions of environmental stewardship, Lakota philosophy stands out for the emphasis on plural relations that are not managed by the human as guardian but, rather, that co-constitute possibilities for life.

Here, stewardship is defined by Cânté Sütá as a continuous process, an active and embodied engagement with an environment that's shaped by Lakota philosophy—Mitákuye Oyás'iŋ (we are all related)—and an ethics of care informed by reciprocity. What this means is that stewardship is participatory; humans are not authoring the management of land from a privileged position outside of the environment looking in, but are, instead, acting as one of multiple species that collaborate to ensure "a healthy environment to live in, learn from and enjoy" (Cânté Sütá 2019, 3). In relation to the neighboring research fields that are managed based on the language of economic

progress, Cânté Sütá's practice of stewardship emphasizes the encounter between bodies (both human and nonhuman species) as the opportunity to nurture relations. Such an approach to stewardship (re)connects people with plants, subverting the distance created by the gridded formation of singular plant species on a research field. The garden, in contrast to the grid of industrial agriculture, liberates possibilities for people to care for and move with plants.

Previous work on the NAMG (Bell 2020) suggests that Indigenous farming practices offer a critique of Western mono-culture but doesn't account for the role plants play in the formation of subversive learning spaces. This study takes as its starting point the integral role that plants play in the formation of the NAMG, thereby refiguring stewardship as a multispecies performance beyond spatio-temporal formations of institutional legacies. The NAMG and the teachings of its caretaker Cânté Sütá are central to rethinking stewardship as a multi-species performance. In an interview that I conducted in June of 2020, Cânté Sütá elaborates on the contradictions of institutional relations:

> In the short months that followed the announcement that the Mdewakanton community donation came to CFANS [...] I was asked to "make the garden pretty" to conform to (University of Minnesota) standards[...] In conversation with (University of Minnesota) research field staff over the years, I was told that CFANS administrators and their stakeholders didn't want the NAMG to exist [...] because "this is prime real estate". (Cânté Sütá and Tawanciotawin 2020)

The University of Minnesota's administrative approach ("make the garden pretty," "prime real estate") resonates with the historical definition of stewardship as "a longstanding association with landholdings," serving as a perpetuation of the legacy of stewardship as a method of control within economic frames of reference (Welchmann 2012, 299). Cânté Sütá's account emphasizes a different approach to stewardship by highlighting the tensions and contradictions of overlapping systems—ecological, institutional, and historical—so integral to understanding the NAMG as a pedagogical space that subverts the modern university's relationship to land, labor, and time.

In this paper, I seek to explicate this ecological mode of pedagogy through intentionally and carefully engaging with Lakota knowledge and institutional experience. With Cânté Sütá's permission, I've been a participant-observer at the NAMG since the fall of 2016, and his thoughts on relations guided how I took field notes on the ways bodies move in relation to the garden. I want to know about how bodies move together in the garden to better understand Cânté Sütá's stewardship, which he defines as an embodied collaboration with the "more than human" world. By tracking interactions between bodies (human and "more than human"), I aim to identify 1) how Cânté Sütá cultivates a critical space to reflect on and to assess institutional frames of reference shaping experiences in particular places, and 2) the capacity for stewardship as a multi-species performance to envision gardens beyond the grid of industrial agriculture.

Along with the participant-observation and interviews with workshop participants, Cânté Sütá and Tawanciotawin granted me interviews and access to their private papers and oral history of the NAMG. I gained access to the interviews and private papers due to the mentor-mentee relationship

that I've developed with both Cânté Sütá and Tawanciotawin since 2016. Given that the repertoire of Cânté Sütá's stewardship and the history of the NAMG have thus far been left out of University of Minnesota historical records, I don't take this privileged access lightly. I understand that the gift of interviews and private papers gestures towards the historically and contemporaneously fraught relationship between academic institutions and Indigenous ways of knowing.

In the context of Land-Grant universities and the language of economic progress, the NAMG is a space to think beyond spatio-temporal formations of institutional legacies. It also expands upon existing garden scholarship in crucial ways. As explained by Jennifer Atkinson, "gardening allows us to inhabit modes of thought and practice that may otherwise be suspended in daily life" (Atkinson 2018, 2). Atkinson's comprehensive overview of garden writing in the United States argues that the subversive practice of gardening exceeds the settler-colonial "New World Eden" narrative that displaces the subaltern, foregrounding how, "for many colonized, marginalized, and displaced growers, gardens are a critical site of resistance, an arena for imagining and creating their own visions of the good life, a place to reclaim a just relation to the land and the stories we tell about it" (172). Additionally, as stated by Rob Emmett, the formation of the garden and the practice of gardening are embedded in historical and political landscapes, and "by the start of the twenty-first century, urban and suburban gardeners increasingly connected their work to the values of environmental justice" (Emmett 2016, 6–7).

While the canon of U.S. garden writing has historically excluded the voice of Lakota, Dakota, and other Indigenous intellectual traditions, the radicality of Cânté Sütá's stewardship performs a different mode of garden writing: although it shares an emphasis on subversion, it is an *embodied* rather than textual engagement with plant life to make absence present and to imagine possible futures. Foundational to Cânté Sütá's practice of stewardship is Mitákuye Oyás'iŋ (we are all related)—a philosophy of the Oceti Šakowiŋ—which informs how the one-third acre of University of Minnesota testing fields has been laboriously revitalized to challenge the historical and contemporary impositions shaping experiences with the land. In his personal writing entitled "Imagining the Oak Savannah," Cânté Sütá describes his stewardship practice as being in relation with *Unci Maka*—Lakota for "Grandmother Earth"—and as "understanding and respecting the relationships that keep all our relatives (plants, animals, insects, air and water) healthy" (Cânté Sütá 2019, 1).

Cânté Sütá's deep consciousness of the agency and interrelatedness of more-than-human forms of life provoke challenging questions in relation to the field of performance philosophy: How does the garden perform? How do multi-species collaborations "write" a different spatio-temporal formation into existence? In this essay, I draw on Cânté Sütá's philosophy to make the argument that stewardship is a multi-species performance that contests the spatio-temporal boundaries of institutions. Rather than apply an intellectual framework to represent Cânté Sütá's stewardship, I suggest that Cânté Sütá's gardening practices *are* philosophy realized through how he sets the conditions for students and faculty at the university to embrace the garden as a learning space.

I begin by situating the garden as a multi-species collaboration stewarding not-yet-thought modes of belonging, paying specific attention to how Cânté Sütá collaborates with the milkweed to question models of institutional engagement that measure productivity in terms of economic gain, and sustainability in terms of fiscal responsibility. I assess the movement of participants at the NAMG to consider how stewardship as performance catalyzes a space to engage with plants beyond institutional paradigms. I then draw from Cânté Sütá's teachings to foreground how milkweed elucidates the duration of collaboration, a multi-species performance that has the potential to inform how we envision and enact coalition building within a Land-Grant university. I conclude by highlighting my experimental performance work at the NAMG in which the milkweed is a partner informing how I understand and enact collaboration, not as a linear production of knowledge but as a diverse and divergent stewardship practice.

Stewardship as Multispecies Performance

Stewardship is a multidimensional construct used by different disciplines in a variety of ways. Enqvist et al. (2018) advocate for an understanding of stewardship grounded in "the awareness of and ability to navigate different approaches to generating knowledge (and connecting that knowledge with action) among social and natural sciences and the humanities" (25). In different ways, the garden is uniquely situated to "navigate different approaches to generating knowledge" and to understand stewardship as an embodied performance that exceeds the boundaries and categories of settlement. At the same time, the NAMG presents us with an opportunity to question by and for whom stewardship is performed. By diverting from anthropocentric frames of reference and focusing on the garden as a multi-species performance, I suggest that we not only emphasize registers of performance beyond the human but also accentuate the sense of performance as a relational process that can't be reconciled within institutional procedures that privilege the language of economic progress.

By expanding which bodies collaborate to produce acts of stewardship, we begin to better understand how acts of care are composed of multiple species. Not only is the NAMG a coalitional space for humans, but also a multi-species endeavor. When the University of Minnesota announced that it would not renew the contract of Cânté Sütá in the spring of 2020, an alliance of residents, students, faculty, and staff organized to protest the decision. The coalition collected the oral histories of the NAMG, documenting the impact of Cânté Sütá's pedagogy and the efficacy of the garden as a space to subvert the logics of industrial agriculture. The organizers referred to the NAMG as a teaching space that articulates how to "live the land acknowledgment" and in what ways anthropocentric notions of stewardship are problematic. Such action prompts us to ask: who or what performs stewardship and where, and by whom stewardship is enacted?

Cânté Sütá teaches a mode of stewardship that animates an understanding of plants as collaborators, offering participants pathways to consider how meaning is co-constituted within a complex set of multiple and moving interactions. By emphasizing the multi-species dimension of stewardship, in stark contrast to linear forms of management and control, Cânté Sütá addresses the capacity of plants to create vastly different spatio-temporal patterns, a capacity foreclosed

when plant life is classified as unproductive or compromising outputs. For instance, Cânté Sütá teaches undergraduates about the cultural and medicinal qualities of pȟeží wačháŋǧa (sweetgrass) while he demonstrates the art of braiding. He gently braids the strands of sweetgrass together. At the same time, he explains how the braid is burned during ceremonies to call upon spirits and as a way to cleanse the space. Cânté Sütá's teaching also raises awareness to the plants sharing the space (including the milkweed) as he reminds the students to take their time: *move through the garden with care and intention*.

The NAMG—a space that was brought into being through the embodiment of land-based cultural values—sets the conditions for participants to recognize and respect the interconnectedness and interdependence of all living beings. As Cânté Sütá explains in a personal statement to University of Minnesota administration,

> Simply stroll through the research fields where the University of Minnesota's Native American Medicine Gardens are located and you will instantly see differences that reflect these practices. It is the only plot that grows more than one crop. It is an environment that is home to hundreds of different varieties of plants, dozens of insects, birds, and animals. (Cânté Sütá 2020)

More than merely a passive walk, to "simply stroll" through the NAMG is an embodied performance that invites an awareness of the relations constituting a particular place. Whereas the industrial spaces surrounding the NAMG perform a linear movement based on logics of outcomes and progress, the NAMG—as a multi-species performance—exemplifies a regenerative movement in which bodies interact with, support, and restrict one another to create and maintain balance.

Scattered throughout the garden are plants that Cânté Sütá refers to as medicine: pšíŋ šičámna (wild onion), which can be applied to wasp stings to relieve the pain and swelling. In addition, pšíŋ šičámna can be consumed for heart health and to detoxify the blood. The chaŋȟlóǧaŋ hú waŋžíla (small leaf pussytoes) can be used to treat swellings, while the sweet flower head and leaves are sometimes chewed like gum for pleasure and as a cough remedy. Growing in patches throughout the NAMG and at the base of the signage, the leaves and stems of pȟeží hóta wápe blaskáska (ceremonial sage) are burned to purify one's self during smudging ceremonies. Another ceremonial plant, čhaŋlí (North American indigenous ceremonial tobacco), is often found growing near the communal arbor located in the center of the Medicine Wheel. This plant can also be used to treat stomach disorders, colds, sore throats, and diarrhea. Often found weaving its way between other plants in the NAMG, the wagmú (Lakota squash) is harvested by volunteers in the fall and serves as a staple during the lean winter months. Other plants that commingle in the space include the waštémna (wild bergamot) and kȟáŋta (wild plum), along with non-native plants such as the ápe kalúlu (mallow) and *waȟpé tȟotȟó* (lamb's quarter). Each of these relations have been used by the Lakota and Dakota people to treat a variety of maladies, from asthma to abdominal pains to bruises and inflammation. While not an exhaustive account of the hundreds of plants residing within the garden, the overview gestures towards the stark difference between land as resource and land as relation.[3]

Indeed, for many scholars, artists, and activists, expanding horizons to think beyond anthropocentric notions of co-existence is vital to combat settler colonial structures that isolate humans from all other species. As ecologist Robin Wall Kimmerer (Citizen Potawatomi Nation) deftly explains,

> Philosophers call this state of isolation and disconnection "species loneliness"—a deep, unnamed sadness stemming from estrangement from the rest of Creation, from the loss of relationship. As our human dominance of the world has grown, we have become more isolated, more lonely when we can no longer call out to our neighbors. (Kimmerer 2013, 208)

Kimmerer notes that it's not too late to repair damaged relationships but that doing so will require symbiotic modes of meaning making that are co-constituted within a web of relations, both human and more-than-human. Likewise, Cânté Sütá's emphasis on relations situates stewardship beyond anthropocentric frameworks, especially as it pertains to unlearning settler views of the land and relearning relationally expansive modes of attention. Stewardship as a multi-species performance turns up as an opportunity for exposing settler-colonial frames of reference that delimit multi-species relations, a task that may liberate the senses and call forth modes of being in relation that are contingent upon reciprocity rather than extraction.

From this perspective on stewardship, then, there is potential for performance—as an embodied process of care—to align with Kimmerer's call to cultivate modes of perception that account for the multiple species that co-constitute gardens. On the garden as multispecies world-making, Catriona Sandilands (2020) suggests,

> World-making in the garden is not only about human desires, and many gardeners have understood this reality for a long time before me. Although there are garden traditions that aspire to tight control [...] the reality faced by people who actually work in gardens is that these worlds are very much multispecies endeavours and, further, that they are also beholden to even more elemental actors: light, heat, cold, water, air, minerals. (180)

For Sandilands, gardens reveal the inadequacy of human visions and endeavors, indeed unsettles the ego, potentially revealing the worlds made possible through multi-species collaboration. Like Donna Haraway's "response-ability"—from which Sandilands draws inspiration—this is worlding understood in terms of ongoing processes, rather than as a cumulative product, a worlding in which species respond and co-create conditions for life. Accordingly, I agree with Sandilands's generative framing of the garden as a multispecies worlding. The NAMG, too, cultivates a space to practice multispecies relations, signifying modes of attunement that might enable the formation of pedagogical spaces that explore embodied practice as a means to unsettle institutional boundaries in both time and space.

Figure 3: View milkweed (to left) and other collaborators within the NAMG. Photo by author (2016).

Rather than presenting a binary that separates the body from the land, Cânté Sütá foregrounds a mode of embodied practice beyond the predetermined grid of the neighboring research fields. Within a decolonial context, reimagining land/body relations is part of a much more spatially and temporally expansive process to return lands to Indigenous peoples. From my field notes on October 19th, 2016, I identified moments when the milkweed acted as a catalyst to think beyond rigid spatio-temporal boundaries. As a participant-observer, I engaged with Cânté Sütá's teachings and participated alongside undergraduate students. The moment proceeded as follows:

> *Cânté Sütá invited everyone to kneel on the ground before the patch of sweet grass, and, before beginning, Cânté Sütá invited participants to think differently about stewarding relations. Rather than stewardship as a linear progression or return to a "norm," Cânté Sütá encouraged participants to attune themselves to varied temporal scales and durations. As an example, Cânté Sütá focused on the milkweed plants peppering the garden. Cânté Sütá described how the milkweed seeds—carried by the wind currents—redistribute and germinate over the winter months, and the seedling emerges from the soil in the spring. Cânté Sütá referenced a neighboring milkweed plant, carefully articulating how the milkweed produces rhythms and interacts within a broader network of bodies. Drifting between storytelling and braiding sweet grass, Cânté Sütá elaborated on the pivotal role the milkweed plays in sustaining migratory patterns of monarch butterflies. Minnesota—situated on the northern range of the monarch's*

migratory movement—served as a generative site for breeding. Cânté Sütá glides his fingers along a milkweed leaf and notes, "During the breeding process, the monarchs interact with the rhythms of the milkweed. The milkweed is a sign of future sustenance to the monarch butterflies, and they deposit their eggs on the base of the milkweed leaves." Cânté Sütá then gently lifted a leaf to reveal the underside. On the base of the leaf is an egg. Once the larvae emerges from the egg, the milkweed leaf will become sustenance.

The vital engagement between the milkweed and the monarch performs a land/body relation that diverges from the meticulously managed research fields, revealing a system of communication within the garden that exceeds anthropocentric temporality. Attuning to the future sustenance provided by the milkweed informs the movement of volunteers as well, creating acts of stewardship that prompt participants to look for the diversity of species that co-constitute a particular environment. People begin looking for the movement between species, carried out over time and beyond anthropocentric boundaries.

The interaction between milkweed, monarch, humans, and an assortment of additional species illustrates ways by which the garden is co-constituted by other-than-human forces, foregrounding a thoughtful reconsideration of performance as points of encounter between plant and human bodies. I'm intrigued by what horizons are made visible when our individual and collective movements resist the spatio-temporal boundaries of the institutions one inhabits. And, as expressed by Cânté Sütá, collaborating with the plant life of the garden names processes of oppression and displacement, the challenges these processes create for food sovereignty, and the possibility for an otherwise.

Stewardship as Critique

In an interview with me, Cânté Sütá refers to his stewardship as a practice in "decolonizing the land," emphasizing a continual practice of embodied knowledge as a means to make visible histories and ways of knowing that all too often appear as marginal or counter to an understanding of land as a monetary investment and resource. Moreover, the NAMG inhabits a university system with a Land-Grant legacy, an educational infrastructure founded on land appropriation and the displacement of Indigenous peoples. Such tension gestures towards institutional contradictions, while also reminding us that one frame of reference doesn't simply dominate or replace another frame of reference. Rather, it is through stewardship that we might better understand and field a diverse set of distinct orientations.

Furthermore, this notion of stewardship grows directly from Indigenous relations to the land. On this topic, Dakota scholar and activist Waziyatawin states,

> One of the reasons that I embrace the term "Indigenous" over others is that I love the notion of coming from the land or being of the land. [...] According to our oral tradition, we did not come from anywhere else; rather, we were created from the clay of Mother Earth at the place where the Minnesota River joins the Mississippi River. In the most vital sense, we are the earth. (Waziyatawin 2008, 39)

Waziyatawin articulates a relationship to land founded on autochthonous identity, rather than a claim to land that relies upon settler logics of property or ownership. As Waziyatawin explains, the Dakota's conception of land is deeply relational ("we are the earth") and counters the settler-colonial conception of land as a resource to be managed. In this way, the philosophical and ethical stakes of Dakota and Lakota intellectual traditions invite us to consider the concept of "land" beyond the scientific or policy-oriented frames of reference that undergird Land-Grant institutions. Considering "land" beyond property or ownership, as Waziyatawin and Cânté Sütá have done, troubles the very economic and historical foundation upon which Land-Grant legacies depend. And resonating with Cânté Sütá's practice in "decolonizing the land," Dakota and Lakota intellectual traditions are continually practiced and require one to think beyond the meta-narrative of chronological progress articulated in Land-Grant/Land-Grab historical accounts. Both Waziyatawin's philosophical writing and Cânté Sütá's embodied practice—such as the aforementioned braiding of sweetgrass or reflective walks—invite thinking beyond land as a measurable resource and to foreground land as a plural formation of species in relation.

Cânté Sütá's stewardship illustrates the necessarily subversive qualities of decolonization within higher education, what Moten and Harney might refer to as the "undercommons of the university," "the life stolen by enlightenment and stolen back, where the commons give refuge, where the refuge gives commons" (Moten and Harney 2004, 102). This philosophical horizon for thinking with and from the undercommons of the university signals the prophetic possibilities realized through how pedagogical spaces are organized to think against institutional power dynamics. Moten and Harney explain, "What the beyond of teaching is really about is not finishing oneself, not passing, not completing [...] It is not so much the teaching as it is the prophecy in the organization of the act of teaching" (ibid.).

Cânté Sütá, too, puts into practice the prophetic by (re)organizing resources to cultivate an initiative intended for the Dakota Oyate. Cânté Sütá explains in an interview,

> The garden [...] served to help create a space for our people and Mitákuye Oyás'iŋ to learn our land-based cultural knowledge. It helped create an Indigenous movement that involves food sovereignty, the open sharing of our cultural knowledge, the history of the land and people of the land, colonizer/settler history, and an address to the health disparities of our people. (Cânté Sütá and Tawanciotawin 2020)

In distinct ways, the NAMG and Cânté Sütá's teachings illustrate what's ethically at stake in Moten and Harney's theoretical proposition of the undercommons. At the core, both projects put forth an ethics of institutional engagement that's not about abolishing the oppressive symptoms, but instead about abolishing a society (and complicit institutional infrastructure) that creates the conditions for those oppressive symptoms to exist. Tending to the garden requires reimagining the university's relationship to the land.

Whereas Cânté Sütá draws on the Lakota philosophy Mitákuye Oyás'iŋ (all are related), the language used by administrators to define the garden—"make the garden pretty," "prime real

estate"—illustrates the power dynamics at play between institutions and the formation of both knowledge and plant life. By attempting to market the garden as a means to manage cultural knowledge and to render plant life as a resource to aestheticize the institution, the administration continues to ensure that the contents of a particular region are harnessed in service of progress within the Land-Grant/Land-Grab meta-narrative. In the words of Moten and Harney: "This is not merely a matter of administering the world, but of administering away the world (and with it prophecy)" (Moten and Harney 2004, 109). Even as administrative moves attempt to order space and disorder networks of life upon which sovereignty relies, Cânté Sütá's emphasis points toward the not-yet realized possibilities immanent in stewardship as a multi-species performance.

Relational Gift of the Milkweed

Following Lakota and Dakota cultural knowledge, the pȟanúŋpala (common milkweed) is a source of sustenance for both humans and non-humans. In Lakota and Dakota tradition, infusion of the milkweed is used as a diarrhea medicine, the flower buds are edible, and the young pods are cooked with meat. The white sap of the milkweed can be applied topically to treat warts, and the roots can be chewed to soothe intestinal inflammation. The milkweed also provides sustenance for non-human species—like the *kimimilagleshka* (monarch butterfly)—generating patterns that shape movement. The seeds depart from the confines of its milkweed pod during the early days of autumn, being carried by the wind currents and redistributed across the terrain. Once the snow melts and the ground warms in the spring months, the warming temperatures amplify the potential of the seed. The emerging milkweed plant continuously overcomes initial tensions and incompatibilities: breaking through the earth, getting exposed to sunlight, competing for space with other seeds. The milkweed plant continues to adapt and modify itself in order to survive. Its emergent form is composed of information. This information records the plant's relation to a collective, elicits a system of communication and continually tends an interplay of bodies.

Cânté Sütá's pedagogical collaboration with the milkweed cultivates a space for reflexive and critical practice by setting the conditions to think about the duration and performance of stewardship, an intensely local encounter between forms that subverts the global force of large-scale agriculture. As part of his collaboration with the milkweed, Cânté Sütá called attention to the infrastructures that delimit the possibilities of the NAMG stating, "The NAMG sits on unceded treaty land owned by the Oceti Šakowiŋ, stolen by the University of Minnesota, which benefits from it every single day by replicating the modern agricultural system which is destroying Unci Maka" (Cânté Sütá and Tawanciotawin 2020). Cânté Sütá then carefully moved between several milkweed plants, placing his hand delicately on the pods and removing them. Surrounded on all sides by University of Minnesota research fields, Cânté Sütá comments on how reprehensible it is that the one-third acre Indigenous-led garden is "constantly threatened and asked to prove its worth because this university does not recognize Indigenous knowledge as valid." After calling attention to the inequitable and exclusionary legacies at the University of Minnesota, Cânté Sütá concludes a gathering in the fall of 2016 by gifting each person with a milkweed pod, not as an object to own, but as a body each is responsible for. Cânté Sütá has all of the participants gather in a circle along

the western edge of the NAMG. He then walks the circle, thanks each participant, and gently places a milkweed pod in the palm of each hand. The milkweed pod is already beginning to split apart, the seeds on the verge of bursting forth. As exemplified in Cânté Sütá's pedagogy, the participant is figured as inheriting past violences and inhabiting a desire to steward the pain. The milkweed pod signals the interplay between doubt and hopelessness (e.g., surrounding fields of industrial agriculture that exhaust possibilities for the milkweed's movement to flourish) and resilience and hope (e.g., the interplay between participant and milkweed that may allow for emergent possibilities). Cânté Sütá prompts each of us to walk away from institutional expectations and settler mappings, to steward the movement of the milkweed seeds and imagine different pathways for co-existence.

If, as the NAMG and Cânté Sütá would have it, connecting participants to place and environment involves weaving between complex relations, then stewardship as performance emphasizes a plurality of bodies in motion. By attending to the milkweed as a body, participants stewarding the milkweed seeds exemplify the necessity to foreground different modes of thinking, being, and performing with the world. Moreover, walking away from institutional expectations marks the will to think otherwise within seemingly exhausted spaces, to materialize not-yet known possibilities for co-existence. Based on my interviews with NAMG participants, individuals noted the dialectical relationship between shaping and being shaped by the world around us, citing the movement of milkweed seeds as an exemplar of how stewardship demonstrates the state of things while also being attentive to the interconnectivity of life. Participants also highlighted the intimacy between palm and pod, the in-between of bodies in motion that prompts participants to think differently about how and for whom subversive spaces are produced. Set with the task to steward the repopulation of milkweed on the grounds of a Land-Grant/Land-Grab university, participants set forth in a plurality of directions to sow their seeds in various campus green spaces. The emergent milkweed addresses the issue of homogeneity (ordered lawns on campus that erase ecological diversity) and has the potential to shape movement in generative ways.

Stewarding Relations

The NAMG as a space to think stewardship differently emphasizes an engagement with ongoing acts of settlement, institutionalized land management, and logics delimiting ecological thought. To think from the duration and movement of the milkweed, it's imperative for those working within institutions—including me—to emphasize stewarding relations as an ongoing process without abstracting, extracting, or making commensurable diverse ways of knowing. As the NAMG teaches us, plants don't just grow in the garden; they make the garden. The interplay between bodies isn't an endpoint, but rather an active instantiation of temporal durations and scales not immediately visible to human perception. The emergence of the milkweed and the redistribution of the seeds traces temporal conditions beyond the management of land as a repeated set of practices, foregrounding a duration shaped by how systems interact. The exhaustion of nutrients in the neighboring fields doesn't vanquish possibility for stewardship but, rather, creates an incompatibility for stewardship to address: a depletion of minerals, microbes, and organic matter

that's incompatible with the Cânté Sütá's vision to help Unci Maka recover and heal from the abuse of industrial processes. In "History of the University of Minnesota Native American Medicine Garden," Cânté Sütá and Tawanciotawin explain that by reintroducing necessary minerals, fungi, and bacteria back into the soil, "the healing process can begin, giving (Unci Maka) the ability to engage in the building of healthy soil" (Cânté Sütá and Tawanciotawin 2018, 1). Cânté Sütá's pedagogy calls attention to processes incited by human disturbance, suggesting that the land (as itself a process of becoming) exerts a force from which the institutional boundaries of space and time can be rethought.

There's an important provocation that Cânté Sütá and the milkweed foreground: reharmonizing bodies. Cânté Sütá notes the importance of reconnecting with a plurality of bodies, de-mechanizing the ways in which movement is delimited, and reharmonizing the collective to produce an ethics of being that's attuned to the dynamics of the whole. The process is durational, attuning yourself to the divergent lifeways that gather and the interplay of temporal rhythms and scales. For example, Cânté Sütá's pedagogy emphasizes the histories of settlement and institutional legacies that have displaced Indigenous peoples. Cânté Sütá reminds students, faculty, and staff visiting the garden how the oppression of Dakota and Lakota peoples involved a strategic disruption of ecological relations, constraining possibilities for self and society contingent on relations to the land. Cânté Sütá's pedagogy in response to the movement of the milkweed is one example of how systems interact: ecological and institutional, contemporary and historical. I close by highlighting gatherings I've facilitated in collaboration with Cânté Sütá in an effort to nuance the impact of ecological disruption on social formations and to understand and reharmonize the relationship between bodies—both plant and human.

Medicine Garden – October 23rd, 2019. The gathering, set at the NAMG, focuses on the act of walking as both critical and creative. The participants include undergraduate and graduate students from both the College of Liberal Arts and the College of Food, Agriculture, and Natural Resources, faculty from performing arts programs at the University of Minnesota and Luther College, and NAMG volunteers from the area. I begin the workshop in silence by leading the participants on a silent walk between the perimeter of the NAMG and the edge of the testing fields. The intention is to set the tone for our gathering: highlighting the boundary between two distinct modes of engaging with the land. We return to the initial meeting place and I provide a brief orientation of the NAMG's history, Cânté Sütá's ongoing efforts, and an acknowledgement that calls attention to the contemporary, ancestral, and traditional land of the Dakota people. Following the opening acknowledgement, and to frame the opening prompt, I introduce the distinction between managing and stewarding, resource and relation. The opening prompt was crafted with Cânté Sütá's relational work in mind: *This evening I invite each of you to co-steward an experience with a partner. Together you'll reflect on individual and collective ideas that the NAMG makes possible. You're responsible for the ideas your partner shares, for stewarding and moving with and through those ideas in a way that's both careful and critical.*

The gatherings are centered around movement, with pairs receiving prompts to walk throughout the NAMG while reflecting on and sharing a story from a moment when they felt limited in how

they could move or think, and to discuss common threads between the two experiences. The meditative walks ask for each pair to practice a heightened awareness and to rely on the milkweed as a beacon that guides where they move. The movement is shaped by the distribution of the milkweed and asks participants to modify their movements in relation to incompatibilities and human disturbances. As the facilitator, I both observed the movement and participated as part of a pair. The movement of the groups varied: most of the pairs walked around the perimeter between the NAMG and testing fields, while others carefully maneuvered within the NAMG itself. In a voluntary post-workshop interview, one participant explained:

> We meandered all over the place, and it honestly felt a little like Catholic confession, but without the judgement and anxiety. It made me think about how walking and thinking cleanse the mind from all the artificial barriers that this social media and hyper-consumptive world we live in imposes. They don't go away so much as they become visible in different ways. In some ways, I could see my mind [...] reflected in the Medicine Garden [...] an entity surrounded by fields of disciplined behavior designed to enhance the subjugation of the natural. That which exists for itself, and not expressly part of a process of production and consumption to which it is made to belong.

The idea of seeing one's mind "reflected in the Medicine Garden" gestures towards the overarching theme of stewardship: *What is being cleansed, both in this activity and also the activity of the NAMG?* The participant notes the discipline of the surrounding fields and the subjugation that these forms of discipline produce, the artificial barriers they create, and the excess they impose.

In another interview, a participant echoed these thoughts, "my partner and I [...] talked about how societal norms and 'rules' limit our movement and thinking. We also talked about how personal experience and culture has influence over thoughts and movements." The responses gesture toward the ways in which self and society have lost equilibrium, the need to imagine a different sense of self or collective identity. Each set of reflections highlights the "barriers," "disciplined behavior," and "rules" that create an artificial limit to how one moves or thinks in relation to the world.

Whereas some participants noted the structures delimiting how individuals, collectives, and environments co-exist, others marked the possibility of being otherwise contingent on stewarding pathways for the future. One participant stated:

> Together, we came up with this idea of "shoulds"—the things that the world tells us we should do. It was helpful for me to share that I'm trying to shed a lot of the "shoulds" weighing me down right now. My partner came up with this excellent image of "shoulds" as rocks that we carry around, and my efforts were like reaching into my bag of rocks and taking them out to leave behind and walk on lighter.

Whether it concerns personal, familial, environmental, or dominant economic systems, each of these experiences gestures toward disruptions that prompt the will to think about relations differently. In the case of the rocks, the partners steward an experience for one another, offering

sightlines and perspectives to navigate institutions and frames of reference that delimit possibilities for personal and social movement.

To go further with the notion of sightlines made visible by multispecies collaborations, participants were given the prompt to generate short movement-based pieces based on their movement among milkweed plants. The responses were varied. One pair ran among the milkweeds, collapsing to their knees and slamming their fists against the ground the closer they were to the neighboring research fields. Another group took the time to "shake hands" with each milkweed that they encountered on their walk. A third group huddled around each milkweed, creating a human-imposed barrier, and then burst backwards in slow motion. The movements, both the paired walks and the collective movement, highlight what's distinct about the NAMG and Cânté Sütá's teachings, that is the important work of negotiating the incompatibilities to envision possibilities beyond the categories and boundaries disconnecting humans from plants. It's not about denial or avoidance, but the ability to think critically about the systems that overlap and inform the way in which bodies co-exist. By understanding the contours of dominant systems, we might discover the breaks and pathways towards a different mode of thinking and being. The movement of participants in relation to the garden is—akin to the NAMG and Cânté Sütá's stewardship—an opportunity to understand formations of power and to envision possibilities for life beyond the grid of industrial agriculture.

Movement in relation to the NAMG is neither an answer to the conundrums of Land-Grant legacies nor a direct repetition of what's immediately visible. Rather, it sparks questions about institutional frameworks within a much more expansive duration and set of relations. While the recent facilitations illustrate the possibilities for embodied practice to engage with ideas central to stewardship as a multi-species performance, they also indicate the limitations: the abstraction of the systemic and epistemic violence decolonizing projects like the NAMG seek to undo. The movements—encoded with meaning from their walks throughout the NAMG—envisions ways of moving with the land that isn't an endpoint but a question to provoke a different set of relations. However, we're left with a vital provocation to consider: *instantiating a different set of relations without abstracting the very violence one seeks to address.*

Conclusion

By figuring stewardship as a multi-species performance, we're presented with horizons to understand how the Native American Medicine Garden "writes" a different spatio-temporal formation into existence. In this way the duration and movement of the milkweed sketch possibilities for reflecting on co-existence while also questioning the idea that dominant frameworks (i.e., settler-colonialism) necessarily determine the shape of social and cultural formations. The NAMG does not offer a privileged insight or definitive answer, nor does it provide *the* way to reimagine the stewardship of environments and knowledges. Instead, it emphasizes the uneven processes that are the effect of settler and institutional policy, and the multiple species that set the conditions for a different set of relations. As exemplified by students braiding sweetgrass in response to the location of the milkweed, stewarding the pod of seeds, and paired

walks in response to contours of the garden, thinking of possibility beyond the visible invites us to perform stewardship beyond imperatives to produce an outcome.

Like milkweed, the movement of the participants emerges in response to the plant life that makes the NAMG. As the monarchs responded to the milkweed, Cânté Sütá's pedagogy responded to the interplay of species within the garden. The garden, understood as a multispecies performance, points to an understanding of stewardship at odds with rhythms and trajectories of ongoing history and policy. Being at odds with dominant expectations and nurturing an awareness of the interplay of bodies helps us understand stewardship as a multi-species performance with the capacity to mobilize in the present to imagine possible futures. The migration of the monarch, the redistribution of the milkweed seeds, and the movement of participants refuses the boundaries of settlement and subverts linear teleologies framing our experiences, reminding us that stewardship carries with it the capacity to move beyond human-centric modes of management, control, and ordering. Whether we are interested in experimenting with pedagogy within institutions, choreographing movement in collaboration with distinct environments, or meandering in response to milkweed, we might learn from the NAMG and cultivate spaces within and beyond institutions that are an invitation to envision gardens that exceed the grid of Land-Grant legacies.

Notes

[1] I write this essay in Minneapolis, Minnesota, a city located on traditional, ancestral, and contemporary lands of the Dakota people, whose origin story begins at a sacred place they call Bdóte, a point where the Mississippi and Minnesota Rivers converge. Additionally, I acknowledge the Ojibwe, whose homelands extend northward from where I live, work, and study.

[2] Woodlands Wisdom grew out of Visions of Change, a project funded by the W.K. Kellogg Foundation's Food Systems Professions Education initiative in 1998.

[3] For more on culturally important plants for the Lakota and Dakota peoples, see Linda Black Elk's primary investigation for Sitting Bull College (1998). Additional information on the uses and medicinal properties of prairie plants can be found in Kelly Kindscher's comprehensive study of prairie ecosystems (1987, 1992).

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Biography

Chris Bell is a PhD candidate in theatre historiography at the University of Minnesota. His research is on contemporary and historical Indigenous performance collaborations, legacies of settlement that continue to shape academic and cultural institutions, and the pedagogical potential of gardens. He is also a community-based theatre practitioner exploring the interplay between ecology and performance, previously collaborating with Tidy Villages (Cloneen, Ireland), Unlisted: Second Steel (Pittsburgh), Lac qui Parle Historical Society (Madison, Minnesota), and Five Acres Farm (Coventry, England). His ongoing collaboration with White Earth Land Recovery Project (WELRP) of White Earth Nation in northern Minnesota is part of a community effort to devise a community-based performance initiative and to envision what mutually beneficial fieldwork might look like.

PERFORMANCE
PHILOSOPHY

ASH STORIES: A SPELL AGAINST FORGETTING

MADELEINE COLLIE MONASH UNIVERSITY

One evening I was driving home through a mist shrouded wood when I noticed a large stand of trees that had recently been felled. Only a few months earlier, in late summer of 2019, I had walked through this wood with a group of people on the way to see the public art sculpture *Ash to Ash* by Ackroyd & Harvey that I had helped to bring into existence. The memorial now stands on the crest of the chalky ridge that formed the Kent downs millennia ago. The path we walked traces this elevation and is known as the Pilgrim's Way, an ancient route that connects the outskirts of London to Rome. The woodland along the downs in this spot is a patchy mixed ash and broadleaf woodland. It is, as most woods in southern England are, crossed with walking paths. The night was settling, a soft rain was falling. I stopped my car in the middle of the lane, walked through muddy debris and touched one of the ash tree stumps. In the strange dusky light produced by my headlights, I said goodbye to the trees.

In this paper I discuss The Ash Project: a curatorial strategy and a memorial process that told the fragmented story of a changing treescape across the Kent Downs. For three years, 2016–2019, I worked across this landscape with The Ash Project to trace the decline of native European ash trees (*Fraxinus excelsior* or common ash) caused by a fungal pathogen that induces ash dieback. I worked as the curator on this project, then in early 2020 I returned to Australia. In this essay I explore the science of the disease, the stories that are told about ash through Europe, travelling from the birth of language to the present plant industrial complex, speculating on the capitalist entanglements in some of the proposed strategies of population recovery. What I hope to highlight in this section is that the complexity of the management approaches being proposed to recover ash species, much like the management of the human pandemic of Covid-19, cover a range of opinion and those that manage ash woodlands and sites vary widely in their views. Given that much of the ash landscape

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is managed by different agencies, landowners and scientific bodies, consulting with these groups revealed the complexities of navigating approaches to plant pandemics in the future. Because of a dramatic shift in place that I performed from the time of this essay being proposed to the time of writing, taking up a new place in the world brought new light, for me, to the story of ash tree. In the next section of the essay, I explore ash tree migration to Australia to reflect on the way in which our view of ecologies both in Australia and in the UK are shaped by colonial histories.

Finally, I return to The Ash Project to ask whether the active process of building a community for a public memorial, such as the one performed by The Ash Project, could be seen as a strategy for embracing 'ethical relationality' and perhaps even kinship with plants. I ask whether such memorials can acknowledge the complex relationship between plants, colonisation, people and place, while considering whether it is possible to form kin relations with plants in ways that are removed from the capitalist entanglements of their management, planting, growing? Are creative or curatorial practices one way of carving out a place for experiments with other kinds of relationships with plants? In this tangled mess of living and dying, what kinds of collective acknowledgement of such disruption can we imagine? The memorial, both as a site and as a process, advocates a deep attention to trees and their suffering, which might also encourage us to act differently.

This essay draws insights from science, humanities, genetics, economics, botanical histories, mythologies and indigenous relationality. I attempt to elaborate a complex picture of human relations with and to the ash tree. Anna Lowenhaupt Tsing makes the argument that science is a translation machine. It is machinic, she says, because "teachers, reviewers, and peer reviewers stand ready to chop off excess parts" and it is translational because "its insights are drawn from diverse ways of life" (Tsing 2015, 217). Through The Ash Project I walked with scientists, artists, poets, wood workers, economists, rangers, foresters, ecologists. Over time, through walking I developed an affective and storied understanding of ash trees. Walking is a curatorial strategy that became a way of assembling a complex understanding of the ecological issues at stake in the loss of the ash. The Ash Project was a process of translating diverse insights to a wider public through walking, listening to trees, sharing knowledge. At the same time, it became a process of unlearning, as I began to turn towards ash trees with different senses. In this essay I hope to share this storying with the reader. I don't believe there is a right way to shape plant knowledge, and as Tsing says "landscapes and landscape knowledge develop in patches" (227). I hope you will read this as a patchy translation of some of the things that stayed with me along the way.

Telling ash stories, repeating them, sharing them, shaping them, is an act of love, an act of remembering. In telling the stories that shape this essay and even repeating them as we did throughout The Ash Project might be a way of casting a spell to resist the forgetting of our own implicated and embodied relations, which might be one of the many tricks that modernity plays on us. To recall that ash were once our ancestors and healers, that each species under threat of extinction has been with us on this earth for many thousands of years and as such shares our history. Human history is not only human. This essay conjures ash stories, with the hope that such a spell against forgetting might be a way to call new futures into existence.

The Ash Project

The Ash Project was conceived by the team at the Kent Downs Area of Outstanding Natural Beauty (AONB). The director, who cares deeply about ash trees dying across Europe, wanted to create a memorial process that would tell the story of their changing landscapes. As well as the memorial sculpture by artist and activists Ackroyd & Harvey, I worked with partner organisations to commission walks, talks, workshops, new writing, tree planting and identification, film screenings and exhibitions to create a patchwork of relationships between ash trees and local publics in Kent. We programmed over sixty walks, including a series of walks with artists and collectives; Adam Chodzko, Hannah Lees, The Walking Reading Group, and Feral Practice: Fiona Macdonald and Marcus Coates. We held a series of exhibitions called *The Ash Archive* which ran across five locations in Kent over three months. Alongside significant ash artworks, members of the public could bring in objects, stories, poems, artworks and photographs of ash and have them catalogued. We traced a history of ash works of art in the UK from John Constable (Stafford 2016) and Henry Moore to the planting of David Nash's *Ash Dome* in 1976 and many artists beyond. We worked with schools across the county, and ran workshops in craft, chair making and carving. We worked with the Woodland Trust to produce localised surveys of the loss that would be caused by ash dieback and built a landscape wide recovery programme (which is still running) to encourage landowners to put in replacement species that might support the communities of life that would be impacted by the loss of ash. We planted over 1000 trees; including new forest connectivity areas and the next generation of other species to replace ash in ash dominated landscapes. The programme centred on the launch of a memorial sculpture by Ackroyd and Harvey. A pair of monolithic deceased ash trees, standing ten meters tall. One charred and blackened, the other stripped and bleached pale. Each speared with over 10,000 ash arrow staves hand carved by Essex wood turners Tom Mareschall and Adam Jenkins. The sculpture now sits on a scarp overlooking the Weald of Kent on the edge of an ash woodland planted at the turn of the millennium which is now ravaged by the disease. At a launch of the sculpture with over a hundred and fifty people in attendance singers chanted fragments from a text by Hildegard von Bingen as part of 'Viritidas,' a choral composition and enchantment for the protection of green places by artist musician Anil Sebastian. Together we told the story again and again, as though casting a spell against forgetting the ash.

Figure 1: Ackroyd & Harvey, Ash to Ash, White Horse Wood, Kent Downs, 2018. Photo: Manuel Vason

Ash Dieback

In Europe and in the US, many varieties of ash trees are dying. Different threats to their health, including Emerald Ash Borer and *Hymenoscyphus fraxineus* (the fungal pathogen that causes ash dieback), have the trees in a pincer grip. A slow death contributing to an extreme decline in ash populations across the northern hemisphere. A quick look through the International Union for Conservation of Nature (IUCN) red list database of threatened species reveals that, of the major varieties of Fraxinus (ash) across the world, fourteen key species are threatened, vulnerable or critically endangered (Khela and Oldfield 2018). The Kent coast, where The Ash Project started, forms a border between Britain and mainland Europe. It is part of the colonial story of the displacement of plants across trading regions. The wind-borne pathogen travels across landscapes, infecting ash trees as it goes. The tiny innocent spores of the fungus enter the tree via the rachis, the long thin stem of their leaves. It spreads into the branches and then the trunk (Forest Research 2021). The pathogen produces a chemical called viridiol which causes necrosis in the sapwood and cuts off supply of nutrients and waters from the roots (Andersson et al. 2009). Necrosis makes the leaves to turn black and fall off the tree. The fungus sojourns in the infected leaf litter at the base of the tree, hibernating overwinter. It spores again in spring when it reinfects the ash, trapping the tree in a cycle of decline. Its vascular system weakens which in turn exposes the trees to other diseases which will eventually kill them (Forest Research 2021). The pathogen that causes ash dieback (or Chalara dieback of ash) is known to have originated in an Asian ash

species called *Fraxinus Manchuria*. In this ash species the fungus coevolved alongside the tree and so the trees' immune systems adapted with the fungus and enabled it to live in harmony with its host (ibid.).

The UN's Food and Agriculture Organisation named 2020 the Year of Plant Health because of the increasing risks from introduced pests through trade, travel and changing climates. The website indicates that plant health pandemics have the potential to impact the way we grow food, rebuild forests and care for soils and ecosystems. Many experts credit the accelerations of global trade in the 1970s as marking a key moment in the ways in which diseases migrated with 'plant stocks' across borders. Plant trade and the capitalist desire for more and more 'cheap nature' led to the introduction of pests to new environments, inadvertently killing off millions of trees in the process. Clive Potter and Julie Urquhart, two researchers who were engaged early on with The Ash Project, write "tree disease outbreaks and pest invasions are likely to become permanent features of the Anthropocene forest landscape—and many of them are traceable, with varying degrees of directness, to commercial interests and human behaviour" (Potter and Urquhart 2017, 63).

Ash dieback disease was 'discovered' first in a plant nursery in the UK in Buckinghamshire in 2012 (65), but theories abound about its actual arrival. Some believe that it could have been introduced via the mass planting of ash that took place after the development of the Eurotunnel as early as the mid 1990s. The presence of ash dieback was known in European forests at this time and a failure to stop these imports has been seen by some as a mistake. Though as Potter and Urquhart note, "confusion surrounding the taxonomic classification of the disease being observed on the continent and the extent of its pathogenicity did not help matters" (65). Following the destruction caused to local ecosystems by the development of the tunnel, imported ash saplings—which at that time were grown much cheaper on the continent—are thought to have been brought in to replace trees along either side of the new infrastructure. Many people I met while working on The Ash Project quietly speculated to me that in the process of planting these saplings ash dieback was introduced to Kent. Jason W. Moore, author of *Capitalism in the Web of Life,* cites feedback loops such as this as evidence that we need to see capitalism as a world ecological process: capitalism exists in nature and nature is produced by capitalism (Moore 2015, 33). Moore develops the concept of the *oikeos* as a way of asking us to think of capitalism as a world ecological event. He writes, "Yes diseases make history, but only as epidemiological vectors bound to commerce and empire" (37). To him, these loops are nature's way of saying that it's not going to work for free anymore.

Ash Stories

Ash trees have had an important place in European myth and economies. And the trees swirl with stories of making and unmaking. In parts of northern Europe, including across Scandinavia ash trees are planted on the edge of farms to mark the boundary and they act as a form of protection for the land. Because of its long straight grain, ash wood has been the material of choice for making tool handles, spears, arrows and domestic furniture. It was used to make war planes in the two world wars—namely, the Sopwith Camel and the Mosquito (Stafford 2016). Across Europe, ash

trees are deeply entwined with the mythopoetic shape of many landscapes. In Norse mythology, an ash is the *world tree*, Yggdrasill, the tree of insight, the tree that connects the nine realms (Abram 2019). It is one of the twenty trees that make up the Celtic alphabet. Within the Ogham—one of the earliest written languages—ash is nion (n), the fifth letter (MacKillop 2004). Fiona Stafford writes in her book *The Long, Long Life of Trees* that "bunches of ash keys were boiled to create an aphrodisiac." (Stafford 2016, 117). Ash trees are associated with love, with healing the loneliness of the human spirit, ancient magic, and the divine feminine; as such, they are often called the 'Venus of the woods' (ibid, 117). The poet Hesiod, from whom we inherit cosmogony and early accounts of Gaia, wrote that the Melian (ash tree) Nymphs were the mothers of the Bronze race, the first recognisable human beings in the Greek mythic order: "father Zeus made a third race of mortal men, of bronze, not at all like the Silver Race, begotten by the ash-tree nymphs, fearsome and powerful. They were concerned only with the groans and violence of Ares" (Hesiod 2017, 115). According to Hesiod, ash trees are our European ancestors; if these stories tell us anything, it is that we once revered trees without separation, learnt to think through language alongside them, and perhaps in a distant ancestral memory; felt their flesh as our flesh.

Hymenoscyphus fraxineus has already decimated ash populations across many European countries. In the UK, forest scientists believe that in the next twenty years or so, the disease will result in an up to 95 per cent loss of over 180 million ash trees across the four countries or 2.2 billion if you are to include saplings (Forest Research 2021). Ash is one of a handful of trees that are native to northern Europe, which is important from a conservation perspective in that these trees are able to provide support to a wider network. Ash hosts communities of almost 1,000 other-than-human creatures and species. Under all management scenarios predicted for the outbreak, all of the more-than-human companions that are obligate to ash are predicted to decline or face extinction within 50–100 years (Broome and Mitchell 2017). Reports of a sharp increase in the loss of biodiversity in Europe track alongside these alarming stories of tree populations in decline. While researching for The Ash Project, I met some scientists who were cavalier about this loss; they would say that the ash populations are likely to recover in around 500–1,000 years. Still others preferred the language of politicians, using figures and calculations to sound a warning about threats to the 'eco-system services' that ash trees provide for market and non-market values—from flood mitigation, clean air and soil health to biofuels and furniture. These stories are also part of the making and unmaking of the ash tree. They raise alarms about the relationship between science and politics and demonstrate how far we have come from revering ash as our kin.

Many forests in Europe are already filled with dead trees. They linger like ghosts in the landscape. The loss of ash will be vast. In sites where ash is dominant, new species will take their place, changing the light in the forests, which in turn will change the plant life around the trees, including moss and lichen. This impacts birds, butterflies, moths and insect populations that all rely on ash in one way or another. Loss always occurs as a chain of events. As Helen Macdonald writes, it's hard to trace back to what we once had: "But perhaps when all the ash trees are gone and the landscape has become flatter and simpler and smaller, someone not yet born will tap on a screen, call up images and wonder at the lost glory of these exquisite, feathered trees" (Macdonald 2015, par. 10).

Asholt wood

One particular wood that I visited, over and over, during the course of the three years was Asholt or Ashley wood. Named for its abundance of ash trees it is considered one of best examples of a coppiced ash woodland in the county of Kent. It is a protected wood, listed as a Site of Special Scientific Interest (Natural England 2021), a tiny fragment of a once thriving way of life. It contains 'indicator' species that signal to observers that it is an ancient and ecologically significant site. The designation document reports that "It has an outstanding lichen flora and a diverse breeding bird community. The site also supports an outstanding assemblage of insects including many local and rare species" (ibid.). The wood is accessed via a small car park that runs behind the road that leads to the Channel Tunnel that connects Folkestone, UK to Calais in France.

Following an old railway track you eventually come to the gate, and over the stile you see a mostly dead ash wood before you. The tops of the ash trees are defoliated, with extra growth closer to the centre of each tree, and too much epicormic growth along the branches. Ash have a pale grey bark that in certain conditions make them appear almost white. Below these ghost trees are a thick wood of shorter species: hazel, field maple. Lower again, dogwood and spindle which flourish in the changing light that the newly dying trees creates. As you walk along the path at the top of the bank of grassland to the edge of the wood, the undergrowth appears dense and grown wild. Entering the wood over a small clay stream the trees above are thin and wispy. This tiny fragment of woodland has been neglected for many years. It was once a place that was managed for wood; ash, hazel and hornbeam coppiced tree stumps are a record of that time. Now, as these local industries fade into memory, the lands are leased by the Ministry of Defence for army training drills. I walked through this wood with many different experts, foresters, land managers and government officials. On one day with a group interested in how we might better care for ancient forests, we searched the woodland for ground flora; herb paris, stinking iris and enchanter's nightshade, indicators of biodiversity that has shrunk across the county. On another walk with forestry experts, we talked about the risk to walkers from falling dead trees. By this point the military were no longer using the wood because of the threat of deadly branches. There were rumours that arborists had died in Wales from trying to remove some trees affected by dieback. The wood becomes dry as the tree dies, and it becomes more dangerous to fell. So, some foresters wanted to bring in giant mechanical harvesters to take all the dead trees away. Others involved in conservation and protection of biodiversity felt strongly that the Kent Downs AONB should work with partners to close the wood off to the public. Leave the dead wood to fall where it lay and to allow the patch of forest to take a new shape without human interference. All the people who joined us in the woods were responsible for managing large tracts of land (National Trust, Woodland Trust, Country Landowners Authority and many others) that will be impacted by ash dieback and we felt certain that among them there was no clear consensus about what a human response might be to the loss of ash.

Ash Genes

Of the loss mitigation solutions that exist the one that seems to raise the most excitement is the genome sequencing of the tree which has successfully mapped ash genes for susceptibility to dieback and uncovered the genetics behind resistance. Trials have included growing trees directly from genetic materials, and also growing genetically selected seedlings, grafted onto root stock (Forest Research 2021). The selected seedlings are then exposed to the disease and the researchers wait a few years to see which trees survive. These test sites are a cruel installation. One trial plot that I visited many times is part of a Woodland Trust estate in Hucking, Kent. It is a gated field to quarantine the trees and prevent the spread of the deadly disease on walkers' muddy boots. Among over a hundred small, dying saplings only one or two are struggling to survive. If you have any feeling for plants, it's hard to watch. It's an infirmary of small trees all afflicted with disease.

Several woodlands across the UK are now being populated with trees grown from the survivors of genetically selected ash trees. These projects are popular in part because they reassure a public grown weary from stories of species loss and extinction that recovery in some form or other will be possible. Yet the strangeness of that future also needs to be felt, as we imagine not only survivors, but test tube trees grown from a narrowing clonal gene pool. Genetically selected trees are inherently weaker because they are not mixing traits with neighbouring trees which means they become even more susceptible to future threats (such as Emerald Ash Borer). In the case of the ash tree, genetic science merges uncomfortably with a nationalist English belief in the morality and purity of native plants in a 'green and pleasant' land. Ash is the most common tree in iconic English hedgerows. It is the second most common tree in woods and the third most common tree across all of the country (Department for Environment, Food & Rural Affairs 2019). Genetics when it is wielded in this way might be a site for invasive bio-political governance, as Margarida Mendes writes in her essay 'Molecular Colonialism': "Our belief in genetic computability and its absolute control leads us to intervene in ecosystems in a manner that has led us to a regime of conflicted biopolitical sovereignty" (Mendes 2017, 135). If forest science and research programmes are in charge of what gets saved and on whose terms, that will eventually mean that some forms of life will be privileged over others. Is this already happening?

Ash Economics

Loss of ash in the UK is often reported in the media in economic terms and it is estimated to cost over 15 billion dollars (Woodland Trust 2021). It is reported in this way to shake us into action. But this is not a way of producing good relations, it's a way of producing debt. For me the question, in an era of escalating loss, of escalating debt, might be: on what basis are we to make such decisions about what to protect? Which species will draw the most attention and research? Which species will be saved? This conflict might lead us to ask what role does genetic late capitalist governance play in a future in which restoring degraded landscapes is going to be key? Could the design of such forests be left to a science that is often in service to the economic value systems that are in

play at the time? Will this mean that some researchers will control patents of ecologically viable seedstocks? Are we to imagine whole forests hand planted by scientists?

In a 2016 report exploring climate change's impacts on ash, the authors end with a call not to abandon ash too soon; however, the language is striking: "While foresters are (currently) unwilling to *invest* in common ash planting, our results show that it is too early to abandon its *exploitation*" (Goberville et al. 2016, 7. Emphasis added). Genetic modification is an ancient human practice, and not all genetic engineering is to be distrusted. The point here is about who wields power over life on the planet and to what end? Bio governance at the scale that is being imagined attempts to atone for the risks to life presented by late-stage capitalism with the same logics that produced these risks in the first place. And it provides us with a convenient cover for, and distraction from, the ongoing implication of capitalist extraction on the ability of other forms of life to flourish. Does each resilient tree drive a deeper wedge into the split between nature and humans? Or does it accelerate unexamined notions of human centred wood-based capitalisms? With threats to plant health seen as one of the biggest risks to human life on the planet (Potter and Urqhart 2017, 65), these future landscapes seem unstoppable. In a hundred and twenty years from now we may well have a genetically selected landscape of ash trees (and other species) across the UK and Europe and perhaps no one will be able to tell the difference.

Bio algorithmic logics and modelling are presented as being able to calculate answers to the planetary crisis we face. Super computers crunch data about climate change. Satellites circle the earth recording the movements of the weather, inscribing land use patterns and ocean temperatures into the massive data systems held by NASA (NASA 2021). Climate change is known both to create increased risks to plant health and also to be one of the many overlooked metrics that could be plugged into the data system in order to more accurately predict where we are going. I've often wondered—without much success in securing an answer—whether there have been any inputs into climate change models of the impacts of tree disease across the planet. If we lose over two billion trees in the UK alone, this means, as Ariane Shahvisi writes, "three billion kilos of carbon dioxide a year won't be captured, equivalent to the annual emissions of 650,000 cars" (Shahvisi 2020).

According to the authors of 'Climate change and the ash dieback crisis,' research and modelling show that *Hymenoscyphus fraxineus* (the pathogen that causes ash dieback) might actually come into a sort of balance with the host species (ash) if temperatures in the northern regions of Europe warm with changing climates. The pathogen, which favours colder climates, will be pushed northward (Goberville et al. 2016). Here another strange feedback loop could be created; the loss of ash might increase the risk of climate change and the warming climate might reduce the risk of ash dieback. In some way, reading between the lines of this report, like some sort of sick joke, the key to a future for ash might actually be its own demise. Science reports on these strange loops all the time, mostly without irony and often without feeling. Planetary algorithms are not only a strange logic in which to put our faith; they also highlight the impossibility of modelling the current and coming loss. Every model that I have encountered makes vast assumptions about human behaviours, economic systems, legal structures. Imagining a future in which human relationships

to nature remain exploitative and based on growth. Not only that, but authors also go to great lengths to remind us of the limitations of their fields of study. For instance, the authors of this report make this proviso among others, to remind readers of the limitations of their modelling: 'our model does not consider either additional projected infestations (e.g. the Emerald Ash Borer) or the effect of extreme climatic events that may affect existing populations strongly' (Goberville et al. 2016, 6). Similar papers define a limited field like this one to predict the future, while simultaneously keeping up the ruse that everything is computable. The authors of this paper are hopeful that their modelling will influence the governance of forest management. In the end perhaps such results can only be a form of speculative fiction. Margarida Mendes writes, "In the process what is rejected is the fact that life is itself an open system, non-linear, and exponentially chaotic" (Mendes 2017, 134).

Ash Migration to Australia

Ash trees of the *Fraxinus* varieties form part of the tree scape in Melbourne where I now live. They line suburban parks, roads in country towns, and city streets. While records of particular ash migrations are difficult to trace, the age of some street trees and Botanic Gardens records tell us that these plant movements occurred throughout the mid-late 1800s and mirrored colonial migration. Seeds were likely to have been brought to Australia in the pockets of botanists and introduced through acclimatisation societies. These societies, established in the 1850s and 60s—first in Sydney 1852 and then in Melbourne 1861—were aimed explicitly at the 'improvement' of landscape. Vast experiments in transforming nature within society, to grow food, shape environments, and to make economies (Lever 2011). The website of Museums Victoria in Melbourne cites its founder Edward Wilson, a private collector, as having the motto "if it lives, we want it" (Tout-Smith 2003). Society members were 'men of science' who brought plants and animals from Europe and undertook experiments to introduce them to the new territory, thus leading a systematic programme of terraforming the country. The Botanic Gardens in Sydney and Melbourne were part of these experiments. Ferdinand von Mueller, director of the Royal Botanic Gardens in Melbourne from 1857 to 1873, is credited with introducing many 'exotic' plants to Victoria. In a lecture titled 'Application of Phytology in Relation to Industrial Pursuits: A Popular Discourse,' he lists an alarming number of trees from all over the world with which he planned to 'reforest' Victoria. At the end of the long list is ash: "[W]e want the various elastic Ash trees, which are so easily raised; we want indeed *no end of other trees* because the greater part of Victoria is ill-wooded, because our climate is hot and dry" (Von Mueller 1876, 93).

Tree diseases might be an unmappable planetary algorithm that starts here in the plant-based capitalist experiments of acclimatisation. A lecture given in 1862 by Dr George Bennett to the acclimatisation society in Sydney points to the destruction of European forests by moth larvae as one of the reasons for importing certain species of birds to Australia to combat such pests: "Man is unable to cope with the destroyers of the produce of his labour. His eye is too dull to perceive and his hand to slow to catch them" (Bennett 1862, 24). Nested within these speculative practices of terraforming land is the idea that capitalism, enlightenment values, Western imperialism, and

industrial processes would fix nature, and thus transform the earth for market—is this where the current plant health crisis begins? Tracing this arc can provide a glimpse into the origins of a contemporary problem in the imperialist environment-making processes of colonial modernity. Histories of plant migration reveal that trade across vast distances increased risks to plant health and created latent threats that are only now being recognised. If research is needed into the causes of climate change and declining plant health, then perhaps we could start by reckoning with this colonial impulse to change, interfere, transform landscapes for profit. In the process severing living relations.

Ash and the Anthropocene

In Elwood, Melbourne, where I am currently based, on the lands of the Yalukut Weelam clan of the Boon Wurrung language group, only two percent of the precolonial vegetation survives (according to signage in a local park). Introducing plants and destroying native food and ceremonial plants was part of the colonial process, changing the vegetal imaginaries of urban spaces and terraforming the country that I now live on. In their article 'On the Importance of a Date or Decolonizing the Anthropocene,' Métis scholar Zoe Todd and Canadian settler writer Heather Davis cite this kind of mass migration of biological material—of which ash is just a small part—as marking the beginning of the so-called 'Anthropocene,' and they write "we argue that placing the golden spike at 1610, or from the beginning of the colonial period, names the problem of colonialism as responsible for contemporary environmental crisis" (Davis and Todd 2017, 763). The Anthropocene is a much-debated neologism that is used to describe anthropogenic changes to the planet that can be read in the geological layers. It is proposed as the name for the epoch to follow the Holocene (Zalasiewicz et al. 2020). Other scholars prefer Capitalocene (Moore 2015), Necrocene (John P. Clark, 2019) or Chthulucene (Haraway 2016) or, most appropriately for the ash, Plantationocene (Haraway and Tsing 2019). In their co-written article, Todd and Davis state: "These processes of environmental transformation and forced displacement can be understood as climate change, or more broadly, a preview of what it is like to live under the conditions of the Anthropocene" (Davis and Todd 2017, 771). They call this transformation 'terraforming' which means 'Earth shaping,' and for them it describes the massive changes to landscapes and country that were part of colonisation. The word is also now used widely in hypothetical discussions about creating the conditions for Earth-like life on other planets. Ash trees are part of our colonial feeling for spaces; while this migration is not the trees' fault, we can recognise, as feminist scholar Donna Haraway reminds us, that it matters "what thoughts think thoughts" and that we need to attend to the situated knowledges of plants here in Australia. This raises questions about what belongs where and what thoughts and histories are thinking with these trees. In Melbourne, street trees perform an archival map of the colonial terraforming imposed across the newly emerging colony. What is here is not what is *meant* to be here, or at least not what was here before we (settler colonial invaders) arrived. As Davis and Todd remind us, settler colonialism is always a process of a severing of relations "between humans and the soil, between plants and animals, between minerals and our bones" (2017, 771).

On returning to Australia after living in England for almost a decade, I was surprised (naively, perhaps) to find ash trees on many urban streets and planted on the edge of farms to mark boundaries. As a child it was easy to accept these landscapes as part of a 'natural' ecosystem but after three years working in landscapes across the UK I can see now what an impact colonial plant migrations have had on a local view of what might be considered 'nature.' This means that in 'reading nature' we need to acknowledge the congress of multiplicities and layers of history, ancient and toxic that such readings imply. Raymond Williams writes that nature is the most complex word in English because it has a range of uses and, like culture, is a word that evolved from describing a 'process' to being a noun. In the case of nature 'out there,' or the way in which we use it to describe the material world, many readings coalesce. As he writes, "The real complexity of natural processes has been rendered by a complexity within the singular term" (Williams 1983). Robin Wall Kimmerer reminds us that the language of science too alienates us from the world. In her native tongue of Potawatomi, each living being is referred to through what she calls the "Grammar of Animacy" (Kimmerer 2013, chapter 4). Trees are each a someone and not something. She says language is "a mirror for seeing the animacy of the world, the life that pulses through all things, through pines and nuthatches and mushrooms. This is the language I hear in the woods; this is the language that lets us speak of what wells up all around us" (ibid).

Ash Neighbours

The practice of planting ash on the edge of a farm in the UK is a story that connects the past to the present—but in Melbourne this practice is a marker of colonisation imposed to designate possession of stolen lands. In some parts of Australia, some varieties of desert ash (*Fraxinus angustifolia* or *Fraxinus oxycarpa*) are now considered weeds by local councils. Plants are considered invasive when they are able to "invade relatively intact ecosystems" (State of Victoria 2020). In Australia it is widely recognised that one of the greatest threats to biological diversity is invasive species. Since colonisation, "some 26,000 plant species have been introduced to Australia by humans, significantly more than the 20,000 or so (recorded) extant species of native flowering plants" (Randall 2007). Even in their own habitats, ash trees are colonisers. Their propellor shaped seeds spread far on the wind, and they grow long tap roots that make them hard to dislodge. So, while they have made a home in Melbourne, ash trees, when out of place, may also play a role in dispossession of other ways of life. Across most of the state, desert ash (*Fraxinus angustifolia* or *Fraxinus oxycarpa*) are listed as naturalised and there is a stretchy distinction to be made between native, introduced, naturalised and invasive plants and animals. I suppose I wonder if bringing the trees here was for early colonists a way of bringing their ancestors with them. I have heard anecdotal evidence (through conversations with community activists as part of the Elsternwick Park Association) that during the leaner months some Eastern Rosellas will feed on the ash keys (the seeds are called keys or samaras) when other preferred food sources are scarce. It makes me happy to learn that ash trees are becoming good neighbours to these birds (Kimmerer 2013, 128).

Walking through my new neighbourhood, there are many ash stories: a eucalypt and an ash grow as though entwined in an embrace. Near the canal, a huge ash tree, growing in three trunks, has a

broken branch that has fallen on the ground and is still growing. There is a street completely lined with a variety of desert ash (*Fraxinus angustifolia* or *Fraxinus oxycarpa*), which flowered early this year in the middle of June where in their natural habitats they would flower in late spring. The desert ash was not the focus of The Ash Project because they originate from southern Europe and, while susceptible to the disease that is killing their northern European cousin (*Fraxinus excelsior*), they are not as vulnerable. They are similar in many ways, except their buds are a different colour; they don't grow as tall and their leaves turn yellow before they fall from the tree. After spending three years with ash trees, I notice them everywhere in Melbourne. But that is not to say that they appear to be flourishing. While there are many, in some ways they don't appear to have acclimatised well. They are not as tall as they might be, they show signs of stress associated with dieback, and their flowering and flushing patterns seem to be affected by the changing climate. In preparing for this article, and because I want to know how they are faring, I called a number of local and municipal arborists, including the ones responsible for ash in my neighbourhood, to ask if ash dieback had been found in Australia. No one could tell me. I also wanted to know why the trees were flowering at strange times of year. There was some speculation that the ash trees had found the dry years hard. At a deeper level I wonder who is watching out for these trees: has ash dieback arrived here? Or are these trees behaving strangely because of the fires, drought, soil and missing fungal associations? How might we extend care to these figures of colonial displacement?

Planting trees is one of many restorative projects that could conserve or transform just some part of our planetary environment in the face of catastrophic climate change. But perhaps this is pointless without a cultural transformation that shifts Western empirical thinking about human beings and our role as nature, within nature, transforming nature. The Ash Project involved walks across many landscapes: in groups we walked with artists, scientists, forest researchers, ethnobotanists, lichenologists, asylum seekers, bird watchers, children, government advisers, tree wardens and many others. Through walking, I learnt everything I could about ash trees: I learnt their stories, science, shape, taxonomies, materials, environments, connections to other species; I learnt how light falls through their leaves; I learnt how to say ash in ancient languages. I learnt how to think with and though a network of relations that make up a human response to crisis. I am not certain that I learnt the ash trees language. I learnt that walking is one way of turning towards this ethical relationality with plants, and one way of being in and among our haunted landscapes.

Ash Walks

Through The Ash Project it became clear that to feel a sense of loss we must first encounter the recognition, kinship or friendship that precedes loss. Thus, our first challenge as curator and artists was to engage the public in the question: "what is an ash tree?" For many reasons, knowledge of trees has waned through Britain, and many newly arrived migrants, urban populations and children are not given opportunities to learn about the place and its plants. We encountered a population in which only 15% of people could recognise an ash tree. We started with tree identification walks, leading many people in towns and parks across Kent in walks to distinguish what makes each tree special. Walking became a way of sharing collectively, learning together so

that we might engage in the deeper knowledge of the damage that has been done. To bring us into closer encounter with trees and their stories. The Ash Project might only have provided a focal point for learning to recognise the ash tree in our landscapes. But on some level that leaves a mark. The events we staged allowed a sense of recognition that might be a precondition for grief to manifest, to be shared, together, in conversation, walking, witnessing, making and unmaking.

Through The Ash Project we asked: what would we call a process that acknowledged the flow of life and death, recovery and loss, and a memorial that could speak of an urgency to recognise kinship with other forms of life in distress? Perhaps we might perform acts of walking, remembering, and experiencing to produce a collective sense of love or care that might also acknowledge our complex shared histories in multi-species entanglements of loss. Zoe Todd, citing Papaschase Cree scholar Dwayne Donald, calls for an 'ethical relationality': "This ethic holds that the past occurs simultaneously in the present and influences how we conceptualize the future. It requires that we see ourselves related to, and implicated in, the lives of those yet to come" (Todd 2015, 250). Donald describes it as an "enactment of ecological imagination" (249). This enactment would resist the temptation of Western agents to define the terms of the ecological crisis and at the same time resist the Cartesian dualisms inherent in the science that underpins this framing. An ethical relation would ask us instead to attend to the network of kin (human and non-human) that give us life, living in a way that is closer to and more implicated in the histories that tie us together in place.

Collective walking enables a slow, sensuous, and embodied relationship to place. It requires a commitment to each other, to building knowledge with a group of people, sharing fragments, stories, folklore, ancient remedies. The collective walks that The Ash Project produced were a way of remembering our connection to the trees around us. Adam Chodzko's artist walk in East Blean Wood imagined a funeral procession for ash taking place in the not-too-distant future. The artist instructed the audience, in moments of walking single file in silence, moments of whispering to each other, moments of seeking out the affect within the wood, "find the angriest part of the wood" and plug into trees for deeper listening. He asked us through various actions to feel our way through a forest filled with emotion, stories, and speculations. Walking, and in particular walking in groups, enables a different kind of speaking with, creating interactions with others and with other-than-human forms of life through an imagination that shapes how the body feels itself in relation to place. Walking is an act that asks us to conceptualise the future, each step, each breath moves from past, present and future in seconds. It might be a way of coalescing or metabolising information with and through the body, allowing us to feel something that data and statistics about climate change and ecological loss fails to do. Collective walking encourages an embodied "ecological imagination" (249). While other kinds of being outside might also have a similar intention, perhaps camping, bush craft workshops, laying under trees, painting, drawing or forest bathing—all of which we experimented with through The Ash Project—walking is an active process that reminds us at a kinaesthetic level of our feeling for and being within the web of life. This is a practice that might mark the beginning of a memorial, a process, a spell against forgetting that encompasses our complicity in the making live and letting die of the Anthropocene.

Ash and Grieving

Catriona Sandilands writes in her text, *Melancholy Natures, Queer Ecologies* (2010), that eco-tourism or pilgrimage merely produces a spectacle, which, instead of deepening our sense of loss, delays or suspends such a process. She writes, "In short, there is lots of evidence of environmental loss, but few places in which to experience it as loss, to even begin to consider that the diminishment of life that surrounds us on a daily basis is something to be really sad about, and on a personal level" (Mortimer-Sandilands 2010, 338). Perhaps creative practices might act as a refuge for experimenting with producing the conditions to make such places available. As the curator responsible in this case, it would be presumptuous to suggest that we all shared this grief, perhaps only a few of us mourned, or felt loss, while others looked on with interest. Does grief produce kinship? Or does kinship make grief available to us? I would say yes, but I can't attest to the experience of the thousands of people we asked to join us.

Haraway and Tsing echo each other in thinking about our capacity for being attuned to haunted landscapes as essential to our ability to grieve with other forms of life and to the specificities of loss on a damaged planet. For Haraway, grieving is a strategy for staying with the trouble: "Grief is the path to understanding entangled shared living and dying; human beings must grieve with, because we are in and of this fabric of undoing" (2016, 39). Haraway speculates that if we can't learn to live with ghosts, then perhaps we can't learn to think with the present moment. Mourning and the work of mourning requires something of us, it is often outwardly expressed as ritual, as action in and through time. It is a process that will be transformative without knowing the outcome. As Judith Butler writes, "There is losing as we know, but there is also the transformative effect of loss, this latter cannot be charted or planned" (2004, 14). Butler's work on mourning, in her book *Precarious Life*, asks questions about what might make a life (human in her theorising) grievable. The same question is being asked and needs to be asked here and elsewhere of our relations to the plant life we all depend upon.

Early in 2020 as the world watched Australian forests on fire, the sense of loss was palpable across the planet. Butler proposes that mourning with others produces a collective sense, a "we," through revealing our very interdependence on each other. In the case of plants, it reveals our interdependence on the web of relations that make all life liveable. Ash trees have a global history, attending to this making and unmaking reveals again that we are living within a system that is implicated in the living and dying of many species across the planet. The experience of grief in the case of ash is underscored by the knowledge of our own complicity. "To grieve, and to make grief itself into a resource for politics, is not to be resigned to inaction, but may be understood as the slow process by which we develop a point of identification with suffering itself" (Butler 2004, 32). When I entered the wood on my last night working in the Kent Downs in 2019, I didn't expect to find the fallen trees, their giant stumps still wet with sap. But I felt something move within me. I stopped the car in the middle of the road, got out and cried into the mist. Grief, when it is extended towards plant life under threat, might be a prefigurative practice for changing our relationships to place, to more than human liveliness, to ourselves.

Throughout The Ash Project, I was often asked 'What can we do to save the ash?' In response, our artistic and curatorial team posed, perhaps if we can't save the ash trees, we can learn to be together among the living and dying, attending to our part of the Earth with curiosity, care and a different sense of attention. Perhaps if there were to be an act of memorial or active remembering that we could all perform, across our locations, it might be a process of developing intimate knowledge of a species at risk. Saying their names in many languages, retelling their stories, following their histories or casting a spell as I have attempted with the ash tree. All so that we might learn the patchy practices of living with, and grieving for, other forms of life.

Acknowledgements

I am writing this on the lands of the people of the Boon wurrung and Woi wurrung language groups of the Kulin Nations, I pay respects to Indigenous knowledge of trees, plants and waterways that has sustained care for Country on these lands for over 60,000 years. An early abridged version of this essay appeared in *Tree Story*: a reader that was published by Monash University Museum of Art and Monash University Publishing in 2021. Edited by Charlotte Day and Mel Ratliff to coincide with the exhibition Tree Story, curated by Charlotte Day with Dr Brian Martin.

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Biography

Madeleine Collie is a writer, artist and curator who now lives and works on the unceded lands of the Boon Wurrung and Wurundjeri people of the Kulin Nations. She led the collective memorial project The Ash Project (2016-2019). She established the Food Art Research Network in 2020 with the support of Custom Food Lab. She has an extensive history in creating and producing projects working across disciplines and always with others to blur the boundaries between experience and knowledge creation. She has presented work in Australia, UK, Spain, Germany, Finland and Singapore. She is a PhD candidate in Curatorial Practice at Monash University and holds a Masters by Research in Curatorial/Knowledge at Goldsmiths College. She is a Teaching Associate in the History of Art, Design and Architecture and Curating Practices in the department of Art, Design and Architecture at Monash University, Melbourne and a Research Associate for the Centre for Art and Social Transformation.

PERFORMANCE
PHILOSOPHY

MAKING NEW LAND: AN INTERTIDAL AESTHETICS

THOMAS PAUSZ ICELAND UNIVERSITY OF THE ARTS

Images in collaboration with Jan van der Kleijn

"Except for the beaches, which always remain the same"

— Agnes Varda

Sea for Space

Little attention had been given so far to the report of the Sea for Space expedition on Mars. No doubt the aura of mystery and pseudo-science around the Oceanus Borealis hypothesis contributed to this neglect. To this day, any mention of the existence of an archaic ocean on Mars raises unanimous skepticism in the scientific community. However, in the wake of the disturbingly wet-looking images emitted from the northern plains of the Red Planet that summer, every former report related to Oceanus Borealis had to be re-examined. My job was to investigate the findings of the Sea for Space group of astrobotanists, who had been stationed on these faraway shores for many years. I knew their mission had been a historical scientific fiasco. It ended in a sad mess, with

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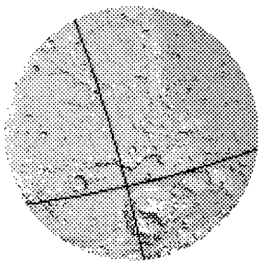
several researchers disappearing and the rest being forbidden from practicing any scientific activity. But I had gotten quite a reputation for my talent at finding gold in the most glitchy archives at the Department. Granular data was my territory.

Sea for Space was an enigmatic group. As the legend goes, it consisted of amateur ocean biologists from Iceland and a few expatriated botanists from France. Even before the last stretches of oceans had dried up on Earth, ocean studies had become a minor discipline in the shadow of the more prosperous astrogeology. To put it plainly, ocean studies was seen as a desperate treasure hunt to discover "life" amongst fossils of desiccated seaweed, crumbling coral reefs, and sedimented plastic waste.

The intertidal marshes, these former wetlands between the sea and the secondary dunes, had slowly recessed with the water from all corners of the globe, leaving the mudflats to dry up like a giant *crème brûlée*. Before long the oceans had grown into a gigantic desert around stale pools of mud.

Intertidal melancholia had become a full-blown artistic and literary genre in those days. Poets and artists competed in rewriting the mythology of thriving and idyllic coasts, evoking magical sea monsters and the beauty of sea flora and fauna shimmering under the waves. I am a collector of these strange lamentations. I find them a soothing treat after a day of dry data-crunching at the Department. For those unaware of this artistic niche, I share here below some fragments of my personal collection of artworks and my favorite text. I hope it will come to light how related this all is to my inquiry into Sea for Space and the Oceanus Borealis mystery.



No one better than 20th-century French writer Michel Tournier had captured the harsh beauty of the intertidal zone. I often cry when I read these pages of Tournier's novel *Gemini*, where the author describes the childhood of two brothers on the coast of Brittany:

> What drew me so powerfully to the wet beach on the nights of neap tides was a kind of silent cry of helpless desolation that rose from the uncovered seabed. The things that the ebb lays bare weep for the flood tide. The mighty glaucous mass fleeing towards the horizon has left exposed this living flesh, complex and fragile, which fears assault, profanation, scouring and probing; this batrachian body with its blistered, glandulous, warty skin, thick with papillae, with suckers and tentacles, shrinks before the nameless horror that is the absence of the saline medium, emptiness, and wind. The thirsty foreshore, bared by the ebb, weeps for the vanished sea with all its streams, all its oozing pools, all its brine-swollen weeds, all its foam-capped mucosities. It is one vast lamentation, the weeping of the suffering shore, dying beneath the direct light of the sun with its terrible threat of drying out, unable to bear its rays except when broken, cushioned, and fragmented by the liquid, prismatic depth. (Tournier 1981, 129)

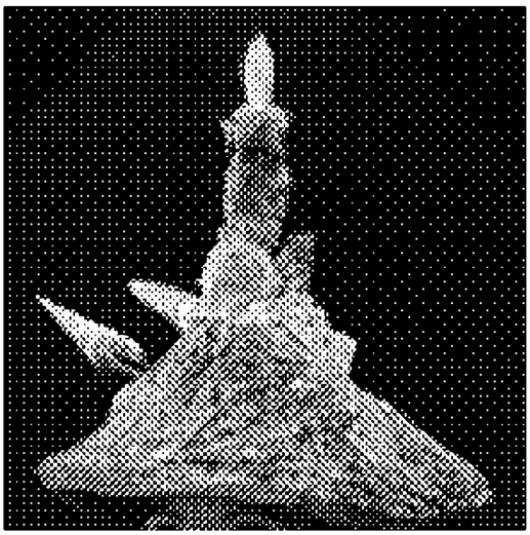
In the words of 21st-century philosopher Emanuele Coccia, the landscape of the intertidal wetlands, where "life is challenged by life itself," evokes a specific feeling:

> The great Melancholy, which strikes us when our preconception of a peaceful, harmonious 'Nature' is challenged. (Coccia and Despret 2018)

When beholding the marshes, where everything is relentlessly submerged, broken down, and digested, we witness with Tournier and Coccia that "any ecosystem is by nature post-apocalyptic and is built upon the ruins of prior ecosystems." This brutal intertidal drama started with the slow selective death of anaerobic species during the transformation from Sea to Land Life, and it was amplified by the invasion of human detritus into the fabric of the Oceans in the 20th Century followed by the excesses of Shore and Sea mining in the 21st.

For the same reasons, previous generations were both fascinated and revolted by the intertidal life forms, the tentacular fauna and flora so well described by Tournier and Rachel Carson, which belonged to *both* wet and dry ontologies. The lurking mudfish, the urchin buried in the wet sand, the octopus camouflaged in the seabed, the plastic-eating worms. In our obsession with reaching other worlds and planets after the oceans vanished, we might have become more akin to these glaucous hybrids than we would like to admit. Interrogating the interplanetary condition, 21st-Century author Benjamin Bratton described the cosmonaut not as a mighty pioneer fronting a mythical quest but, rather, as a fragile creature taken out of its ecosystem and hiding in multiple technological shells: the helmet, the cabin, the space station (Bratton 2019). Uncertainties and fears, which had a home in the intertidal zone, have not disappeared: they have diffracted out into the cosmos, all the way to *Oceanus Borealis*.

We can also find echoes of intertidal melancholia in the humorous and macabre imagery of Eileen Agar. Agar was a unique Surrealist artist who explored the entanglement of bodies on the shores through a practice of collage. Her skull with shells and bouillabaisse hat, both resembling the process of natural biofouling that used to take over boats and sea infrastructures, have a strangely hypnotizing beauty.



The intertidal marshes and the sandy coasts were indeed highly sensible zones in the context of climate change in the early 21st century, as testified by the ubiquitous ruins of artificial seawalls and flood barriers that can still be excavated. According to a *Coastal Problems* study, more than 70% of sandy coastlines worldwide were suffering from erosion for decades before the Great Ocean Rise.

The factors causing this erosion were multiple. They ranged from direct human-induced damage such as sand mining and the removal of kelp and dune grass, to more complex anthropogenic processes disturbing the normal circulation of sediments and accelerating the rising of sea levels. This mass erosion of sandy beaches was perceived as a threat to populations depending on land and soil for survival. The industrial and human-centered answer to this threat was swift and brutal: the systematic deployment of a range of hard landscaping architectural forms, from seawalls, jetties, and groynes to barrier islands along all the coasts. A new industry isolating land from sea flourished. Coastal plant forests were uprooted to make way for long concrete emergency dikes; salicornia, dunegrass, beach heather, and goldenrod plant communities were set on fire or shredded without mercy to fuel interplanetary transport. Isolated from their ecosystems and symbiotic companions, the handful of bushes that were spared in this ruthless hard landscaping process of the shores slowly desiccated when the oceans recessed a few years later.

As remarked by the author of *Coastal Problems* (1995), protecting the land with hard barriers went hand in hand with destroying the ecosystems of the beaches. A closer look at these short-sighted solutions revealed that in the long term, they participated in the same problem by further disturbing the circulation of sediment that regulated the geomorphology of coastlines. Like in a Borgesian short story, coastal communities soon had to build new seawalls to protect the old eroding seawalls, in an endless race against the ocean "locking coastal managers into a never-ending program of artificial shorelines maintenance and control" (Viles and Spencer 1995, 350).

Salicornia

In the last decade of the Blue Marble Era, the Sea for Space gang was roaming the gloomy mudflats between Iceland and Greenland. By default, they took to the study of the last recorded specimens of a plant called *Salicornia europaea*. These archaic shrubs used to cover the sand dunes of many shores, forming a lush miniature salty jungle in association with other pioneer plants and microorganisms. Salicornia was one of the first plants to effectuate the passage from sea to land life, from anaerobic to aerobic life. Its delicate tubular morphology made of "true leaves" was a complex bio factory of desalination. As seawater traveled from the root cells through the epidermis of the plant, salt was rejected on the outside and freshwater channeled to the top.

Salicornia had been known to humans under many names: samphire, glasswort, Mother of Glass, Al' kali, sea asparagus, Protector of Sailors, and more. This semantic variety did not only reflect the many subspecies of the genus Salicornia populating the beaches. It was also a testimony to the thousands of uses this plant had been put to in the history of human industries: from soap-making in the ancient Middle East to glassmaking in medieval Venice; from salt-harvesting in Brittany to distilling biofuel for space travels in South America in the late 20th century. When botany was still thriving, some studies were even conducted about mass cultivation of the plant in carbon capture fields, as their carbon metabolizing rate was higher than the rate of most trees. A true ally to humankind, *Salicornia* had survived world wars and the recent Era of Ecological Disasters.

Surprisingly, a Sea for Space paleobotanist claimed to have spotted some lone specimens of Salicornia plants surviving in one of the poor districts that could not afford to pay for maintenance of the flood protection dikes. There, *"a number of projects were tearing down (old) seawalls and sacrificing land to develop into salt marshes as a buffer against wild seas"* (Simons 2016). These natural buffers were seen as cheaper options for areas that had no real economic value.

These unexploited *terrains-vague* had become ad-hoc nature reserves, "third landscapes" (Clément 2005), where water and hardy species lingered a few years longer.

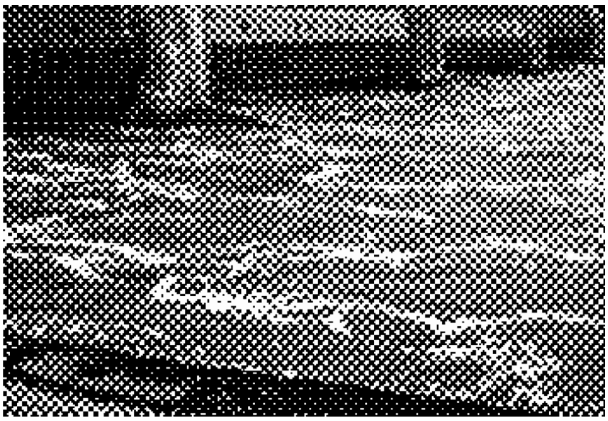
How could salicornia individuals survive the extreme rise and fall of sea waters and adapt to both dry and wet extreme conditions? Even the mythologically hardcore mudfish and the resilient urchins had turned into dust by then.

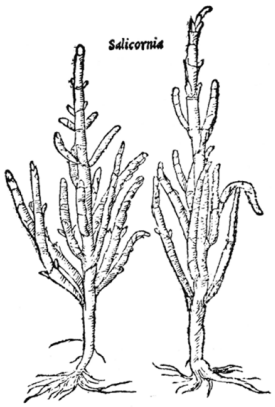
Sea for Space published a thorough study on this salicornia phenomenon entitled *Making New Land: An Intertidal Aesthetics*. This speculative botanical and geological publication made quite an impact on me when I was a young terraforming student. It was first and foremost an activist book, where the authors exhorted coastal communities to stop building higher hard dikes and artificial flood barriers and to start replanting salicornia everywhere instead. Their main argument was that *"this unassuming plant, almost prehistoric-looking, with its tiny leaves and small thin flowers [...] is our first line of defense against storms and rising sea levels that batter the coastline and lead to serious erosion"* (Simons 2016, 1).

Can a mundane shrub have been our defense against global erosion? Could the planting of an intertidal forest have changed the course of events? According to the authors, salicornia *"makes its own land"* by gathering debris of shell, sand, and organic matter around its roots. This "dissolved organic matter" becomes a firmer soil through further symbiotic bacterial transformation. This soil can then be colonized by the secondary plants, whose roots consolidated the dunes and formed the lost silhouette of the old shorelines. In a fascinating gesture of biological self-sacrifice, salicornia *"creates the conditions for its own annihilation"* (Mabey 2015, 160).

To think that the shape of continents could be designed and protected by plant–bacteria associations was a very controversial theory. The volume *Making New Land* was filled with models and obscure diagrams of what is described as *"plant architecture"* to support the author's ideology.

Unthinkable today, but these theories of plant agency made a lot of us dream at the time.





The *Making New Land* study referenced a forbidden book entitled *Designing with Nature* by Ian McHarg. This older pamphlet advocated for a deeper understanding of natural processes such as the complex formation of dunes and shorelines as a source of knowledge for landscaping and terraforming. McHarg's famous exhortation *"Man must become the steward of the Biosphere"* has often been taken out of context by anti-naturalists. The end of the sentence was *"To do so, he must design with nature"* (McHarg, 1969, 5).

In McHarg's holistic environmental philosophy, a careful study of natural processes could give us some precious clues on how to deal artificially with landscape and climate processes. From a survey of humble dune vegetation, for example, McHarg extracted some precise indications on how to construct a series of complementary dikes, which would act as filters rather than walls. With McHarg, Sea for Space defended an *"aesthetic of membranes, porosity, fluidity, toxicity, filtering, convergence, osmosis, transfer, exchange"* (Sea for Space 2014, 4). For them, *"a body or a country that builds hermetic walls around itself is already a dead body"* (Sea for Space 2064, 6).

A haunting quote from the chapter "Sea and Survival" in McHarg's book was reproduced on the back cover of *Making New Land*:

> Thou shalt not walk on the dune grass.
> Thou shalt not lower the groundwater below the critical level.
> Thou shalt not interrupt the littoral drift.

In the most infamous final argument, the authors of *Making New Land* go so far as to draw some links between these holistic landscape studies and ancient traditions such as "shore shamanism" in Canada and France: *"Shamans of the Shores,"* they write, *"recognized intertidal spaces as liminal spaces, ecological limits where civilizations are made and unmade"* (Sea for Space 2064, 10).

Our scanning drones still find ritual shamanistic artifacts buried in the desertic mudflats. Sculpted puffin heads, for example, were a frequent feature, because of the half-fish, half-bird nature of puffins. Other favorites were carved reliefs representing the devilish-looking octopus. *Making New Land* was a unique prophetic mix of nature observation, indigenous knowledge, and exhortation to technological disobedience. It might have been the last attempt at a "holistic thinking" of the environment. The book was censored immediately.

> The Intertidal shellfish rose and flower-headed zoophytes from a strange age of naked, plant less lands evolved around the sweeping fishless seas that had no names. Within and beneath this incomprehensible, predestined march of a million summers and faded pictures, the fish, our ancestors, rushed through the waters of later worlds. The first bees, flying over colossal forests whose feet stood in slime, living in pairs and small families, evaded the great spiders and centipedes. Dragonflies with two-foot wings nested in the undergrowth at the edge of a limitless sea. Continents started to separate. (Buxton 2006, 178)

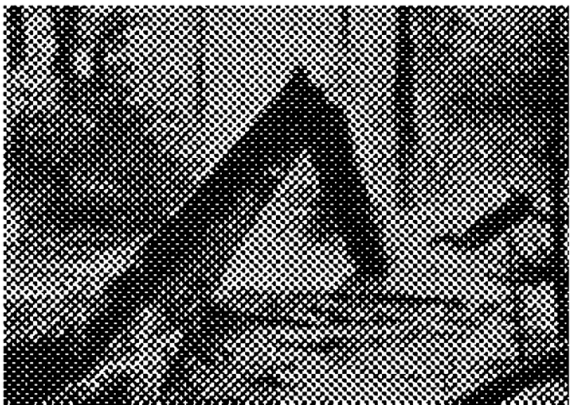
Horns of Silica

Facing growing disapproval from the academic world after this publication, Sea for Space retreated to a self-organized commune in the north of Iceland. There, they could host meetings with other climate activists and indulge in cult-like activities like beach cleaning, seed banking, and making symbiotic aquariums. From this northern retreat, they would periodically publish a research journal, the *Symbiologist Bulletin,* with articles and rants belonging to this so-called "New Science."

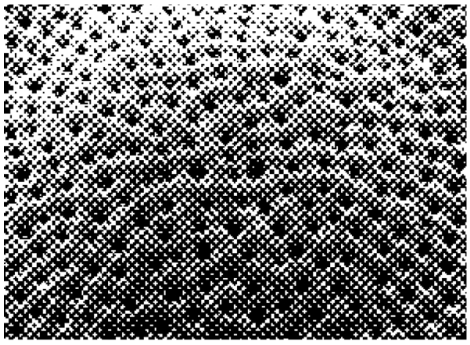
During their obsessive studies on salicornia, they had found one abnormal specimen of a plant covered with a shell resembling the silica formations of diatoms. Diatoms were ancient microscopic algae which built intricate geometric silica shells using a unique process of self-assembly. These miniature glass cathedrals were famously recorded by Ernst Haeckel. No one had ever recorded this shell-making process occurring elsewhere in the plant kingdom. This gave the "Horn of Silica" found by Sea for Space a mystical aura. *"The lace-like shell forms intricate networks of glass around the stem akin to fungal rhizomes or silk cocoons*" (Sea for Space 2068, 12), claims the article on the Horn of Silica from the *Symbiologist Bulletin*.

How might such an anomaly happen? And who cared for anomalies anyways? Heavily influenced by the writings of Lynn Margulis, the article defends the theory that salicornia and diatoms had developed a symbiotic relationship to survive the Ocean Dry-Up. The scenario illustrated with diagrams that thirsty colonies of microscopic diatoms agglutinated around the green stems of the plant and tapped into its xylems to suck up the water channeled from the roots. In exchange, the plant would use these silica shells scaffolding its skin as miniature solar panels to boost photosynthesis: I give you water, you give me sun and energy. With time, these mutualistic species would have formed a new symbiotic organism: a plant-algae-shell complex, a horn of glass and chlorophyll, which could adapt to wet or dry extreme conditions alike. In short, a species that would

be indifferent to its environment being dry or submerged, and resilient to extreme variations in atmospheric composition.

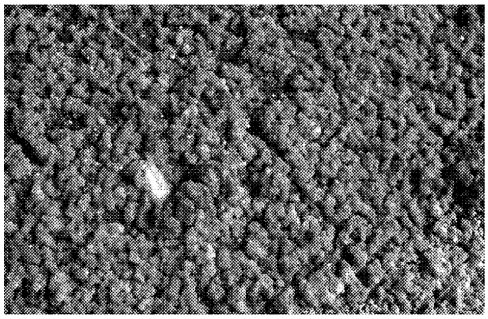


Using this discovery as a conceptual springboard, Sea for Space claimed that we might be on the brink of unearthing a new type of coral-like ecosystem that might tolerate traveling to other atmospheres. This revived the hope still shared by many for a possible interplanetary fauna and flora. The media coup created an unprecedented "space coral rush" attracting all sorts of opportunists and optimists to the ex-shores of Iceland. Space corals were a timely symbol for communities in search of new idols, and everyone wanted a piece of this new biological gold. The hopeful pilgrims made their way to north Iceland by plane, by car. Some even crossed the crystal deserts on foot. They built camps, erected stone cairns, and crowded the improvised hot dog stands, sharing maps and photos of their expeditions. In the evening, they rallied in an abandoned arthouse cinema to listen to Sea for Space speeches about future symbiosis.



At dawn, they would be seen crawling on their knees, scouring the wastelands in search of a trace of the space coral.

Needless to say, no abundant "coral forest" was found. After a year of this frenzy, there was still only this one single shriveled fragment of Silica kept under protective glass. Horns of Silica became one amongst many other natural fetishes like petrified lightning or the last great auk crumbling in other dusty museum vitrines. The disappointed space coral lovers left one by one, leaving only a new layer of human waste on the Icelandic coasts. The now well-trodden concept of "ironic devolution" was crafted to describe this type of nostalgia induced by wishful biological mirages.



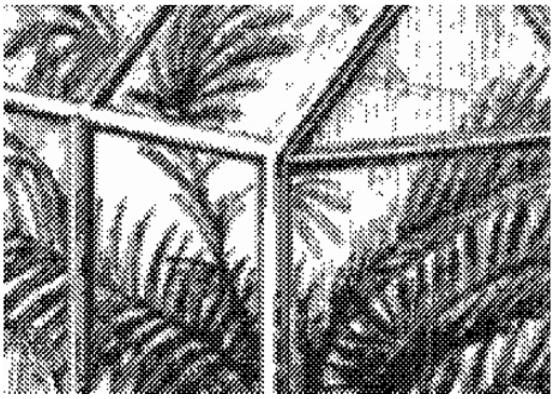
New Shores

It was around that time that, despite the liberties they had taken with dominant science, the Sea for Space researchers were recruited for a major astrogeological expedition to Mars. The mission's goal was to map the geomorphology of Oceanus Borealis for prospective mining of rare metals, a resource in growing demand. It was a bold role considering their eccentric profile. The argument was that their intimate knowledge of coastal geology would be a useful addition to a team of robots operating scanning drones. The expedition was funded by tech oligarch Sofia Brandenburg, who had made her fortune in commercial astrobotany. Brandenburg was famous for assembling teams of mavericks and interdisciplinary-minded lunatics for mercenary–but very lucrative–spatial ventures. She was too rich and too well connected to be criticized. On their side, the Sea for Space group was in dire need of cash after the recent space coral flop. They quickly abandoned their anti-commercial principles and left the commune for the Mars Excavation Institute.

As it turned out, the megalomaniac Brandenburg had a very different agenda when reaching out to Sea for Space. Her "geological" mission was a cover designed to smuggle specimens of artificially preserved intertidal species and extremophile life forms to Mars, with the intention of mass-

breeding them and selling them back on the Earth market. The traffic of exotic species between planets had become one of the most lucrative businesses. Each Sea for Space expedition to Oceanus Borealis could secretly shuttle a menagerie of pioneer plants (salicornia, dune grass, and more), containers filled with diatoms, urchins, sponges, coral species and whatever other hydrophytes Brandenburg's biologists had artificially kept alive in their intertidal aquariums.

For over a decade, this interplanetary traffic went unnoticed. Astrogeology was well regarded as a necessary activity for the industry since the ocean bed resources had been exhausted on Earth. The cover story was perfectly believable and packaged by an efficient marketing campaign. To their credit, the renegade Sea for Space researchers produced state-of-the-art geomorphological reports and maps of the shores of Oceanus Borealis in the early years of the mission. This kept their underground activities unsuspicious. Thanks to the unlimited resources provided by Brandenburg, they even contributed to the discipline of astrogeology by developing new mapping tools and techniques to model the dynamic formation of dunes on Mars, which I cannot resist including in this document. Unlike the coastal dunes of Earth, you will see that the Martian dunes have multiple slip faces, due to the hundreds of contradictory winds participating in the formations of the ventifacts. Our understanding of complex Polydunes is a legacy of this mission.



A more media-friendly side to this story was the public discussion about the decadent lifestyle that Sea for Space and Brandenburg had established on Mars. Rumors were spreading about a luxurious biosphere surrounded by a warm lagoon. Tabloids reported a forest ripe with tropical fruits growing in all seasons, complete with friendly birds of paradise revived from DNA samples flying around. At the origins of these popular stories was *Mars by the Sea*, a poetry book written by Frustula, one of the Sea for Space expatriates, which had leaked on the internet. Her lyrical texts and botanical descriptions were so vivid, colorful, and luscious that they sparked envy in the desert

landscapes of Earth. Were these rumors another marketing trick orchestrated by Brandenburg to confuse public opinion and hide their illegal zoological activities?

Amid this moral controversy, the mission ended abruptly after the disappearance of several Sea for Space members in what was reported as a flash Martian sandstorm. Three researchers went missing without a trace. Following a scandal in the scientific community, the inquiry uncovered the illegal breeding activities but failed to find any satisfactory explanation for the tragedy. The other members of Sea for Space were repatriated to Earth and interrogated without much success. The group was dismantled and Brandenburg was heavily fined for misuse of the industrial research budget. In reality, she was blamed because the species breeding had no immediate taxable value. This astrobotanical "farce," as it was described by officials, had delayed more lucrative mining expeditions planned for Oceanus Borealis.

I have always found it puzzling, that after the survivors made it back to Earth, none of them claimed any fame for inventing the Polydunes Theory or revolutionizing geomorphological mapping techniques. They could easily have used this sordid story of failure to advance their career, write memoirs, or become media celebrities. Quite the opposite, the Sea for Space crew retired quietly, and everybody agreed on the total failure of the breeding experiment and mourned the loss of valuable researchers. Years passed before a mining mission came across the ruins of their illegal astrobotanical base. The lagoon had become a muddy pond filled with Martian regolith and the luxury biosphere had crumbled under the mighty sand winds. The images from these ruins reproduced in the report carried very little useful information. To find out what had exactly happened on the Martian shores, I decided to meet a Sea for Space survivor in person.

Frustula

I used my contacts in France to track down Frustula, the famous Sea for Space poet. Frustula had moved back to Brittany to dedicate herself to oyster farming and cosmological writing. Like the rest of the group, she insisted on being called by her code name long after the mission. Others had names such as Radiolaria, Amoeba, or Polyp. Frustula was the Latin name for the beautiful silica shells built by diatoms, the unicellular microalgae, which populated our oceans and had allegedly formed an association with salicornia in the Horn of Silica theory. The miniature glass architectures of diatom shells focused the distant sunlight underwater to increase photosynthesis. They were organic, chiseled glass solar panels with an infinite variation of morphology.

I had hoped the "human" Frustula could help me dissipate the fog I found myself in with the Oceanus Borealis enquiry. By that time, my head was filling up with strange visions of plant architects, shells morphing with leaves, and dunes shifting like water. I was still in the dark about the actual events on Mars, and how they could help explain the shimmering images we had received. The more data I gathered about this story, the more my certitudes were dissolving. During the week leading to my flight to Brittany to meet Frustula, I had some disturbing recurrent dreams where I was disappearing in quicksand. These were vivid nightmares, in which I was a different person every time, in a different place. However, the dreams always ended in the same

way: my body was slowly engulfed by some sandy ooze, and I was as powerless as the tragic hero of *Woman in the Dunes*.

The long and dull flight to France over the Atlantic Crystal Desert was punctuated by these sandy visions. On arrival, I took the regional train to reach Frustula at her "waterless" oyster farm in Brittany. From the mugshots in the report, I was expecting to meet a bitter recluse. She would most probably retell the official story of her colleagues disappearing in a Martian sandstorm.

To my surprise, I was greeted at the station by a very joyful human, who looked much younger than eighty-four. Frustula belonged to that generation of Old Earth lovers who had adapted gracefully to disasters. Her coarse white hair seasoned by the ubiquitous salt framed an enigmatic face with fierce grey eyes. "What took you so long?" she asked. "We have a lot to talk about!"

We drove along the old Estran shore, scattered with ghost villages and shipwrecks. My host spoke constantly during the two-hour drive, occasionally pointing at local architectural remnants of the shell farming industry or at some geological formation: rusting oyster cages, empty clam tanks, and thousands of concrete pier columns covered with petrified mussels. Frustula explained that the shell industry had been doomed long before the Ocean Dry-Up when all the growers opted for artificial shell culture rather than water remediation. After this, all the funding for remediation science and industry was diverted to fuel the rush to excavate other planets. The knowledge gathered by several generations of shell farmers evaporated with the contaminated water. As we reached the surroundings of her oyster farm, her mood suddenly lifted: "Do you know why I have always loved oysters?" she asked mischievously, before answering her own riddle: "In an oyster, we are on Mars…"

Only now do I fully understand what Frustula meant. The atmospheric conditions inside a closed oyster shell are analogous to those in outer space: no sunlight, limited oxygen, heightened pressure. Extremophiles and pioneer species, which resist harsh environments and constant

climatic changes, come from the sea, not from the continents. Intertidal organisms are the early life forms who colonized the Earth because their complex metabolism can sustain the extremes of outer space. This common-sense observation was the founding hypothesis of Sea for Space, and it had greatly inspired Brandenburg's dream. With hindsight, this makes the endless series of costly astrobotanical projects of growing cotton, lettuces, and other Earth-dependent plants in space with cumbersome technologies absurd. These were human-centered dreams, based on a colonial image of space as a mirror of our own planet. Despite seeing it as a "blue" marble, our enduring blindness to the oceans had rendered us equally blind to the real beauty and potentials of outer space. Only a handful of astrobotanists had ventured into growing algae in interplanetary travels. These experiments were very successful, but their findings were ignored by the spatio-agronomical lobbies modifying crops and seeds for interplanetary agriculture. And space-algae research was eventually abandoned.

My day in the company of Frustula was filled with such revelations on the parallels between ocean biology and living conditions on Mars. I finally understood the limits of human-centered astrobotany, based on a colonial imaginary of space. I also started to realize that Sea for Space might have been underrated geniuses.

However, my visit to the waterless oyster nursery that evening was the most memorable experience. We had to tread barefoot for a few hundred meters on the beach in order not to crush any juvenile specimen that might have fallen from the baskets. As soon as the skin of my feet touched the damp, gelatinous sand, I was overtaken by an indescribable pleasure, which bordered on the erotic. A fine mist was hovering over the oyster beds, produced by a few homemade devices that used condensation and air to generate the water fog. I closed my eyes for a moment, letting the tiny droplets enter the pores of my face and refresh my bare ankles. For a short moment I imagined that when I would open them, the Atlantic Ocean would be scaling the horizon again.

“Keep your eyes shut, and take this.” Frustula had deposited in my hand half an oyster shell covered in seaweed and tiny barnacles. The shell had the coldness and weight of marble, although its curved relief gave it a soft, comforting feel. On the outside, I could feel with my fingertips a series of ridges spaced regularly from the central mount of the shell up until its sharp edges. I felt tears uncontrollably rolling down my cheeks. This was like touching a core of pure, stratified data.

Reverse Trophic Cascade

Back at the farm, Frustula had laid out maps and her diaries from the Mars expedition on the kitchen table. “It is time,” she said without waiting, “that our story is told. The story of *Spacecoralia*.” With her permission, I started the sound recorder and sat back on the wooden chair in front of the papers and material fragments. What follows is the unedited account of the recording I made of Frustula that summer day in a remote corner of Brittany. I leave it up to you to believe these transcripts–but remember that this came from a discredited astrobotanist-turned-oyster farmer.

> In the year leading to the disappearance of my colleagues, our artificial breeding of intertidal species had worked beyond our wildest hopes. We had created a miniature lagoon with the condensation from our greenhouse. Our small patches of genetically modified pioneer plants, which had taken five years to sprout and mature into adult individuals, were now growing at a fast rate all around the water’s edge. The plants were deep blue, due to the filtered sunlight, which created variations in colours unlike any spectrum known on Earth. We had used CrisprCas to crossbreed hybrids of salicornia plants and diatoms. Yes! We synthesized our own Horns of Silica! We were mimicking the natural specimen we had found in northern Iceland. In this box, you can see some of the fossilized horns I smuggled back. They are so gorgeous, I miss waking up with them around me immensely. With these plant-diatom hybrids thriving and taking root, the first permanent

Polydunes started to form on the edge of the water. A perfect spot to lie down and look at the stars. Inside the lagoon, Sofia wanted to experiment with a coral reef, which we named Spacecoralia. We used the proven methods for coral reef rehabilitation developed at Okinotorishima, the Japanese Coral Island (Nakamura et al 2011). The Japanese researchers had developed a sustainable system to produce adult corals of the Acropora tenuis species by assisting their hatching in tanks, in the same way that all the 'fake wild' salmon were produced on Earth back in the day. We had spread the larval settlements of polyps obtained with this same process or artificial hatching all around the lagoon bed. The colours they were taking cannot be explained in words! It was a constantly changing gradient of pinks and purples, sometimes fully translucent and sometimes reflective and shimmering. Because of the reduced air resistance and the absolute silence, we could hear these corals grow and move, like thousands of tiny mouths whispering to us that they were alive.

There was still some manual care work to carry out at this stage. To make sure that the balance of species was right, some of us had to dive in the lagoon every day and physically move some of the colonies by hand between cages. This was very delicate work, and with the sounds and texture of the space corals, a very immersive and visceral experience. This is when some strange things started to happen. The divers would stay longer and longer underwater, more than needed for their tasks. When they returned they started to talk about seeing other species that could not be there. One had seen Hyas, these spectacular sea worms; another swore he could see Gorgones…They all agreed that the species they were seeing were more like images or spectres. They were morphing into other life forms and dancing around the coral polyps as if emanating from the corals themselves. Some of us were joking that extinct species from Earth had come to haunt our artificial Martian paradise. But as scientifically minded people, we concluded on some light reflection, which—added to the fatigue of the divers—might have been taken for these moving life forms. Because of the tight schedule at this crucial time of the growth program, the divers were heavily medicated to be able to keep the same rhythm of work. But things got weirder. The following days the divers would often not speak for several hours after their dives. They would just wait by the lagoon, lying on the polydunes for their next shift back under, with a smile of beatitude.

We only had one team of divers, and they were obviously overworked. That evening, the emergency council gathered and we decided to suspend their manual handling of the space corals for a few days and to send our robotic submarine explorer to survey the underwater colonies. But the three divers refused to obey this decision and sunk back into the lagoon that same night…never to return. We also lost the submarine, which only emitted glitchy images before breaking down altogether. I found this notebook scribbled in the cabin of Amoeba, one of the divers. The last sentence reads: "I was alone, now we are a colony, a forest, a hive."

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Biography

Thomas Pausz (b. Paris, 1978) is a critical designer and artist based in Reykjavik. In his interdisciplinary practice, Pausz stages real and fictional ecosystems to amplify the voice of non-human entities through careful work on media and narratives. In his entangled scenarios intersecting experimental science, ethics and contemporary design, Thomas Pausz offers a poetic space for renegotiating technological and biological hierarchies.

Recent exhibitions include *Interspecies Futures* (IF) at the Center for Book Arts, New York (2021); *The Wildflower* at Hafnarborg Museum, Iceland (2020); *Creatures Made to Measure* at Design Museum Gent (2019); *Food Bigger than the Plate* at the Victoria & Albert Museum, London (2019); *Species without Spaces* at the Istanbul Design Biennale (2018); *Making New Land* at the Swamp Pavilion, Venice Architecture Biennale (2018); and *Politics of Food: Markets and Mouvements* at the Delfina Foundation, London (2016).

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