

Radicle Assemblages

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A Thesis

in the Humanities Program

Presented in Partial Fulfillment of the Requirements

For the Degree of

Doctor of Philosophy (Humanities Fine Arts) at

Concordia University

Montreal, Quebec, Canada

November, 2019

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Abstract
Radicle Assemblages

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Radicle Assemblages explores aesthetic praxis through an experiential research-creation doctorate in the Interdisciplinary Humanities Fine Arts program. This studio-based project interwove diverse phenomena through speculative narratives inclusive of matter, thinking with techné, and in contemplation with living entities. The artworks that were developed in this study explored aesthetic modes of relational play among natureculture assemblages. The artworks acted as a form of dialogue to contemplate what would become defined as relations of tender curation. Individual gestures were composed for learning care and expanded perception through artistic experiments with domesticated natures such as houseplants, bacteria, algae, gastropods, and yeast (among others). The concept of tender curation emerged where what became a central component of an artwork required daily attendance. These experiences opened to a kind of tending that inspired affection and concern for the living creatures that were assembled within artworks. Another concept that formed was the *radicle assemblage* as a motif for thinking with differences among beings that are unique yet unfolding together in shared or common space. Comprehending subtle affects through interactions with vegetal life led to concern regarding personal and ethical implications of artworks that were composed with living phenomena. The living beings changed one another in their interactions. As a result, the artworks shifted over the duration of the study increasingly towards co-creative relations with domesticated, urbanized, or shared-territory beings as a way that incrementally expanded the artist-researcher's ability to respond. Through practice and in the dissemination of multiple artworks, this research-creation doctorate eventually gravitated towards a post-anthropocentric art of response-responsibility. In this sense, the research-creation methodology evolved as a form of contemporary art practice that performed an expansion of possible social relations through generative propositions as incremental research.

TABLE OF CONTENTS

List of Images	vi
Fossilphile.....	xxii
Introduction	1
Research-Creation as a Companion Species?	12
Research-Creation as Intervention.....	13
Material-Semiotic Acts	15
Doctorate Research-Creation Phase I	16
Doctorate Research-Creation Phase II.....	19
An Art of Response	20
Performative Aesthetics	21
Radicle Assemblages	32
Radicle Assemblage + naturecultures.....	34
Studio Project II: <i>An Inquiry into the Case of the Extraterrestrial Botanist (2014-17)</i>	37
Extraterrestrial Vegetation	41
VI: Vegetal Intelligence	43
Intra-terrestrial (within Earth).....	55
The Radicle.....	56
Living Semiotics	58
Sympoietic	60
More-than	82
Performing with Research-Creation	82
Let Be: Ecological Art	84
Studio Project I: <i>Automata for Colour (2010-14)</i>	86
Leakage.....	87
Performativity of Things.....	89
Live Archive	93
Studio Project II: <i>The Temporary Archive of Ambiguous Architecture (2012-15)</i>	103
Conclusion.....	109
Bibliography	117
Page Left Intentionally Blank	119
Appendix A: Select Studio Projects	120
<i>Flock (2008-11)</i>	120
<i>Timepieces & Tropisms (2010)</i>	124
<i>Agar Agar Architecture (2010)</i>	128
<i>Animated Landscapes: lilipod, seakultures (2010-11)</i>	131
<i>Culinary Cultures of the Kinder/Garden, Doughbie (2010)</i>	137
<i>Disco for Darwin (2010-)</i>	139
<i>Beta-Commons (2011-)</i>	141
<i>Plants & People Project (2011-)</i>	142
<i>Allopolyploidy (2011-)</i>	144
<i>Wundergarden: Olfactory Map of populus (2010-11)</i>	148

<i>The Committee: Propopopo</i> (2013-)	158
<i>Materializing the Sublime</i> (2013-)	160
<i>In Search of the QR_ebra Plant</i> (2013)	162
<i>Seeking Chimera</i> (2016-)	170
<i>The Ancestry of Objects</i> (2013-16)	173
<i>Audible Vegetable Visible Animal Magic Mineral</i> (2017)	181
<i>nevis, nevis, nevis</i> (2017-)	184
<i>The Sandstone</i> (2018)	186
<i>Welcome the Terrans!</i> (2018-)	188

LIST OF IMAGES

Image 1. <i>nevis, nevis, nevis</i> , Nevis, West Indies (2018-)	ix
Image 2. <i>Listening to the North</i> , Lapland, Finland (2009) ¹	x
Image 3. <i>Seeking Chimera</i> , Geneva, Switzerland (2016) ²	xi
Image 5. <i>Greenhouse Studio</i> (2010–11). Concordia University ³	xii
Image 6. <i>Greenhouse Studio</i> (2010–11). Concordia University	xii
Image 7. <i>Greenhouse Studio</i> (2010–11). Concordia University	xiii
Image 8. <i>My Perfect Life Keeps Leaking into Your Perfect Life</i> , Schoppingen (2010) Oyster Mushroom, detail	xiv
Image 9. <i>The Sandstone and the Sound of Stones</i> , Nevis, AB (2018) Lichen	xv
Image 10. Hybrid plants from seed catalogue, <i>Allopolyploidy: The Work of Art in the Age of Genetic Modification</i> (2011-)	xvi
Image 11. <i>Plants & People Project</i> (2011) Plant and people portrait	xvii
Image 12. <i>Greenhouse Studio</i> (2010–11). Webcam	xviii
Image 13. <i>Greenhouse Studio</i> (2010–11). Pitcher Plant	xix
Image 14. <i>Disco for Darwin</i> (2011-) Plant movement study, drawing	xx
Image 15. <i>The Slagger, nevis, nevis, nevis</i> (2018) Found slag stone	xxi
Image 16. <i>Semiotic Wilds</i> (2018) Nevis, video stills	xxii
Image 17. <i>In Search of the QR_ebra Plant</i> (2013) Gatineau, Seed Tombs	7
Image 18. <i>Animated Landscapes: Lilipod</i> (2010–11) Madrid	8
Image 19. Studio Growroom (2011-12) Montreal	9
Image 20. <i>Agar Agar Architecture</i> (2010) Montreal	10
Image 21. <i>Animated Landscapes: Lilipod</i> (2010–11) Toronto	11
Image 22. <i>Audible Vegetable Visible Animal Magic Mineral</i> (2017-)Studio	26
Image 23. <i>Audible Vegetable Visible Animal Magic Mineral</i> (2017-)Studio	27
Image 24. <i>Audible Vegetable Visible Animal Magic Mineral</i> (2017-)articule ⁴	28
Image 25. <i>Audible Vegetable Visible Animal Magic Mineral</i> (2017-)articule	29
Image 26. <i>Audible Vegetable Visible Animal Magic Mineral</i> (2017-)video	30
Image 27. Apple snail egg nest (2017)Studio	31
Image 28. Apple snail (2017)Studio	33
Image 29. <i>An Inquiry into the Case of the Extraterrestrial Botanist</i> (2013-14) Installation detail of hydroponic grow chamber ⁵	45
Image 30. <i>ET Botanist: phyto-portal</i> (2016-17) Installation, Detail of ghost tissues ⁶	46
Image 31. <i>ET Botanist: Closer to Home</i> (2017) Video Installation	47
Image 32. <i>ET Botanist: Closer to Home</i> (2017) detail of growth patterns on shell and 3D print	48
Image 33. <i>Ghostplant</i> , Montreal (2017) remains of tissue culture	49

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⁴ Photo Credit, Image 24-5: Guy L'Heureux

⁵ Photo Credit: Sophie Joyal

⁶ Photo Credit, Image 33, 36: Guy L'Heureux

Image 34. <i>ET Botanist: Closer to Home, The Mesh</i> (2017) Detail.....	50
Image 35. <i>ET Botanist: Closer to Home</i> (2017) detail of 3D fractal trees and skull, shell, sedum, hand blown glass spheres ⁷	51
Image 36. <i>The Bloom</i> , Montreal (2015) An airplant blooms	52
Image 37. <i>An Inquiry into the Case of the Extraterrestrial Botanist</i> (2013-14) Installation detail of plant sensing module	53
Image 38. <i>ET Botanist: Closer to Home</i> (2017) detail of root tapestry mold making, studio	54
Image 39. <i>ET Botanist: Closer to Home</i> (2017) detail of Marma Harp, prototype in studio, Nevis	63
Image 40. <i>ET Botanist: Closer to Home</i> (2017) detail of instrument, prototype in studio, Nevis	64
Image 41. <i>Automata for Colour III</i> (2014). ArtSouterrain	66
Image 42. <i>My Perfect Life Keeps Leaking into Your Perfect Life</i> , Schoppingen (2010) Act I-III.....	67
Image 43. <i>My Perfect Life Keeps Leaking into Your Perfect Life</i> , Schoppingen (2010) Act I-III.....	68
Image 44. <i>My Perfect Life Keeps Leaking into Your Perfect Life</i> , Schoppingen (2010) Act I.....	69
Image 45. <i>Colour Theory for Carnations</i> (2011) Studio	70
Image 46. <i>Colour Theory for Carnations</i> (2011) Studio	71
Image 47. <i>Automata for Colour II</i> (2012)Toronto	72
Image 48. <i>Automata for Colour II</i> (2012) installation	73
Image 49. <i>Automata for Colour</i> (2011) Sketch.....	74
Image 50. <i>Automata for Colour II</i> (2012-13) artist statement	75
Image 51. <i>Automata for Colour II</i> (2012) detail	76
Image 52. <i>Automata for Colour II</i> (2012) detail	77
Image 53. <i>Automata for Colour II</i> (2013) Saint Jean Sur-Richeleau	78
Image 54. <i>Automata for Colour II</i> (2013) Saint Jean Sur-Richeleau	79
Image 55. <i>Automata for Colour II</i> (2013) Saint Jean Sur-Richeleau	80
Image 56. <i>Automata for Colour II</i> (2013) detail	81
Image 57. <i>Automata for Colour II</i> (2013) detail	82
Image 58. <i>Temporary Archive of Ambiguous Architecture</i> (2013) Les Territories, Montreal ⁸	94
Image 59. <i>Temporary Archive of Ambiguous Architecture</i> (2013) live archive, detail	95
Image 60. <i>Temporary Archive of Ambiguous Architecture</i> (2013) live archive, detail	96
Image 61. <i>Temporary Archive of Ambiguous Architecture</i> (2013) archive 1-2, 3D printer inside modified shipping crate, detail.....	97
Image 62. <i>Temporary Archive of Ambiguous Architecture</i> (2013) Winnipeg, Video Pool.....	98
Image 63. <i>Temporary Archive of Ambiguous Architecture</i> (2015) detail.	99
Image 64. <i>Temporary Archive of Ambiguous Architecture</i> (2015) detail.	100

⁷ Photo Credit: Cécile Lopes

⁸ Photo Credit Images 58-61 : Alison Reiko Loader

- Image 65. *Temporary Archive of Ambiguous Architecture* (2015) detail 101
 Image 66. *Temporary Archive of Ambiguous Architecture* (2015) detail 102
 Image 67-70. *Cosmograms* (2018-) beeswax, laser etched panels
 textiles, cast bronze coral, cast hydrocal coral 106-08
 Image 71. *Future Centre for Future Art* (proposed)
nevis, nevis, Nevis, West Indies (2018-) 116

Appendix Image List

- Image 92. *Flock* (2008) Concept Sketch 121
 Image 93. *Flock* (2009) Southern Alberta Art Gallery, Lethbridge 122
 Image 94. *Flock* (2011) Eastern Bloc, Montreal 123
 Image 95. *Growing Up* (2010) Greenhouse Studio 125
 Image 96. *Timepieces and Tropisms* (2010) screenshot 126
 Image 97. *Growing Up* (2010) Greenhouse Studio 128
 Image 98. *Edible Clones* (2010-11) Greenhouse Studio..... 128
 Image 99. *Agar Agar Architecture* (2010) 129
 Image 100. *Animated Landscapes* (2010–11)..... 130
 Image 101. *Animated Landscapes* (2010–11) Sea-jellies 133-34
 Images 102-04. *Doughbie: Edible Companion* (2010)..... 135-38
 Image 105. *Culinary Cultures of the Kinder/Garden*(2010) 139
 Image 106. *Disco for Darwin* (2010) 140
 Image 107-08. Spirulina dye on textile, studio (2017)..... 141
 Images 109. *Plants & People Project* (2011)..... 142
 Image 110. Plant tissue cultures (2011)..... 143
 Image 111. *Culinary Cultures of the Kinder/Garden*(2010) Agar/Leaf Fish 144-45
 Image 112. Workshop with caterpillars (2011)..... 148
 Image 113. *Olfactory Map of populus* (2011)..... 150
 Image 114. *The Committee: Propopopo* (2013) 158
 Image 115-17. *In Search of the QR_ebra Plant* (2013)..... 163-65
 Image 118. *Seeking Chimera* 170
 Image 119. *The Ancestry of Objects* (2013) Video Still 173
 Image 120. *The Ancestry of Objects* (2016) animation residue, 1st phase
 of installation 174
 Image 121. *The Ancestry of Objects* (2016) of installation..... 176-79
 Image 122. *ET Botanist* (2017). Video Still 184



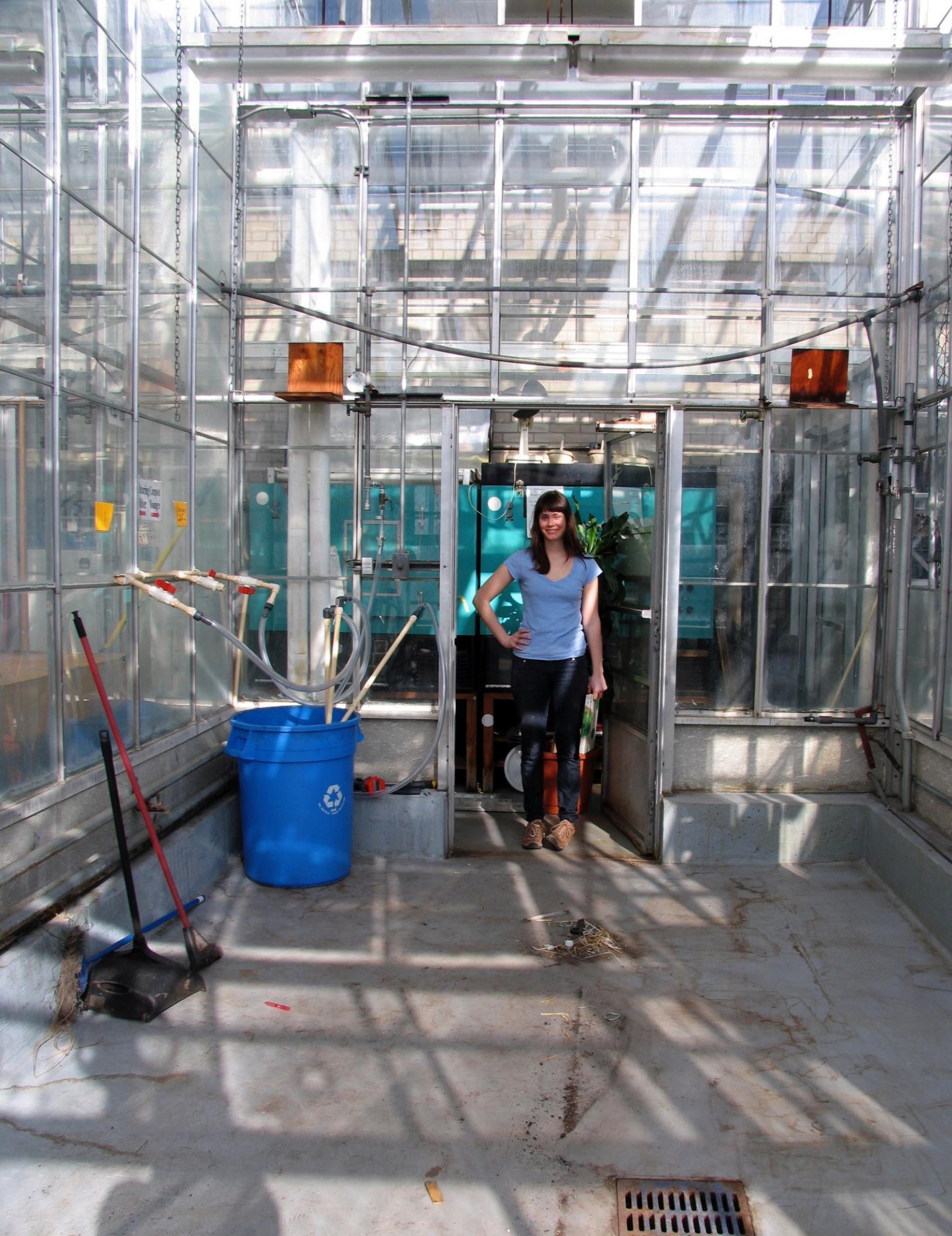


Image, previous page. nevis, nevis, nevis, Nevis, West Indies (2018-)
Image, this page. *Listening to the North*, Lapland, Finland (2009)





Image, previous page. *Seeking Chimera*, Geneva, Switzerland (2016), Images, this page. *Greenhouse Studio* (2010–11).
Image, next page. *Greenhouse Studio* (2010–11). Concordia University





Image, *My Perfect Life Keeps Leaking into Your Perfect Life*, Schoppingen (2010) Oyster Mushroom, detail.
Image, next page. *The Sandstone and the Sound of Stones*, Nevis, AB (2018) Lichen.





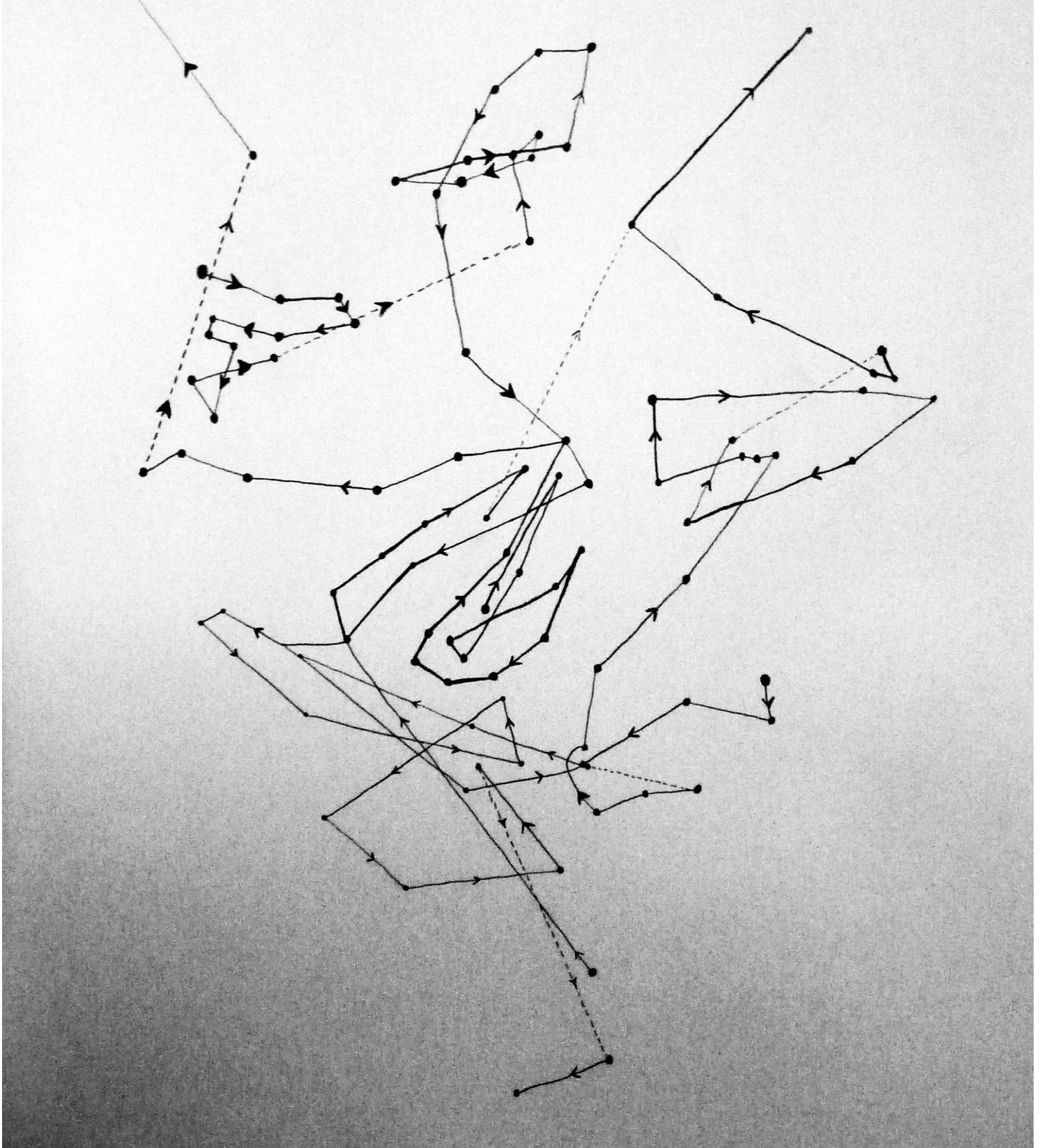
Image, this page. Hybrid plants from seed catalogue, *Allopolyploidy: The Work of Art in the Age of Genetic Modification* (2011-) Image, next page. *Plants & People Project* (2011) Plant and people portrait.





Image, this page. *Greenhouse Studio* (2010–11). Webcam.
Image, next page. *Greenhouse Studio* (2010–11). Pitcher Plant





Image, this page, *Disco for Darwin* (2011-) Plant movement study, drawing.
Image, next page. *The Slagger, nevis, nevis, nevis* (2018) Found slag stone.



Fossilphile

Rattle shake,
folded snake,
one wound,
branched flake, slitted tongue, cracked on skin, wrapped, coiler, pinker shell,
plastic icon, doubled up, fortune holds.

Tricky tricks, mastered young. Frottage, rubby dub, flabby tongue.
Melamine: green pearl shift, older case, graver day, not a bone, sly, trace.
Where done gone, ghostly snake?
Flick, tend, rake.

Moonish day.
Was it helios held such form?

Fossil, fossil, found us now, left all noon, backseat, rear door.
Former fossil.
Wars in fossil,
for funghi wins.

For the forces, for p.stenciller, for panspermia, for possibly puke, for potential, for plasma, for perplex complex, for pet.
Plasticity, meltability,
Spider's tether's forceful gesture's.
Season, take first move after go. Seasons stop. Seasons no.
Before. Sea flog, slosh, slash, swills, kills me young. Now.
Territories for fossils makes Stranger's caverns.

Dry, hot heat, take or break, snail meat. Bones in throat. Fishy flake. Fish cake. Softer bones, gentler ways. Wool, yes knots, days-old moss. Dripper milker albino bearder.
Grotty flow. water_waite. Trickier tricklers. torrid, fate.
Luck in mountains. Lick, lick, slip. Deed, dud. Dust,
gravitronate. Trustler.
Leaky titter, flows, cylindracles,
a-mesh, spirit, helix, spiral.

Maps: to get back again. Dear Young Orienteer: Do, then run, bury flags here.
Nail such nylon to more limbs, tension, charge me, colossal, fallen, fur-face,
whinny, chase. Junk's pile, crayon's nest, relief. Pissed in laughter, funny fossil, waxed-lid spy, sneaky snake,
dice in eye, fast and break. Ice grades, intelligent cement. Secret wink, green cells falter, formaldehyde.
Nanna, nanna, fly, flies why?



In tro d u c t i o n

My multispecies storytelling is about recuperation in complex histories that are as full of dying as living, as full of endings, even genocides, as beginnings. In the face of unrelenting historically specific surplus suffering in companion species knotting, I am not interested in reconciliation or restoration, but I am deeply committed to the more modest possibilities of partial recuperation and getting on together. Call that staying with the trouble.

—Donna Haraway, *Staying With the Trouble*, 2016

The purpose of this study was to propose and explore an aesthetic praxis among natureculture assemblages with the assumption that all phenomena are perpetually composing in this world.¹¹ This was accomplished by adopting artistic research-creation methodologies that could generate both simple and complexly entangled earthbound stories.¹² The artistic research-creation included performative narratives that were based in language, inclusive of matter, and thinking with techné,¹³ while in consideration of a variety of living creatures. Aesthetic praxis, in this case, referred to various activities that aimed to produce sensory-based artifacts or experiences using visual perception, sound, vibration, life forms enacting, or installations of objects that reflect on differently composing ecologies. In this study, *ecology*, was meant to think with complex relations among or with the preformation of phenomena, objects, and beings in differing durations and of diverse compositions. For the dissertation, the central questions were: How did aesthetic forms of relational play or performance within artistic assemblages enact new forms of worldmaking? Further, how could speculative narratives involving multi-species beings enact relations of tender curation instead of acts of colonial exploitation?¹⁴ What forms of post-

¹¹ Aesthetic praxis is a process by which artistic practices, processes and concepts emerge and evolve over time.

¹² Research-Creation is an emerging academic research methodology that balances artistic production, technological innovation, and theoretical concepts. Research-creation is based on experimentation and produces research via creative methods, or creative production as research, as well as a number of other variations depending on the unique qualities of a project's scope. This methodology can act as an intervention to traditional academic scholarship by creating alternative experiential forms of knowledge practices through material investigations.

¹³ The editors of *Worldmaking as Techné* write in the introduction that: Techné is an ancient philosophical concept that has been debated by philosophers such as Aristotle, Xenophon and Plato, as well as more contemporary philosophers such as Guattari and Heidegger. In simplified terms the concept of techné is concerned with the art and craft of making, but the extended meaning implies a discussion of the significance of the work, including how and why something is made. *Worldmaking as Techné: Participatory Art, Music, and Architecture*. Hong Kong: Riverside Architectural Press 2018. Ed. Mark-David Hosale, Sana Murrani, and Alberto de Campo. page iv.

¹⁴ Human-animal is a identifier that denotes “human” as part of a larger group of living beings, “animals” that share

anthropocentric art enact possibilities for moving towards a sense of response-responsibility in regards to multi-species relations?

These questions were set up as a flow between micro-macro inquiry oscillating from intimate, individual gestures of learning care, or tender curation through performative play with domestic natures, to then be expanded into a broader *worldling* context.¹⁵ Tender curation was a concept that emerged through learning to care for plants and other living beings that were situated within a public exhibition or social context. The idea for tender curation evolved over numerous exhibitions and in close proximity with living beings in a studio context where what would become or what was an artwork required daily care and attendance. Yet, it also encapsulated a specialized care that involved the growing affection and concern for the living creatures that were included in the artworks. The study commenced by establishing a space in an urban rooftop greenhouse (Concordia University greenhouse downtown Montreal) to grow plants while interacting with the vegetal beings in relation to digital sensors.¹⁶ The initial intent was to understand possible sensing qualities that are typically beyond human comprehension or perception. After a couple years of this studio research, the inquiry shifted to thinking more with plants as they are within the ground prior to any form of transplantation or mediation. Over the course of this study, acts of caring and responding to living phenomena within a creative practice allowed the research to evolve. The result was the adoption of methods that moved away from highly mediated, invasive or disruptive practices. These ideas were influenced by meditative concepts from Eastern traditions such as Yoga and Zen Buddhism where a shift in physical qualities such as breathing patterns, attention, and visualization act as forms of subtle-sensing from within the body. From these learnings, forming relational and perceptual affects in spaces shared with vegetal life also triggered a consideration of the ethical implications of works that included living entities. The methods that were engaged were articulated as creative gestures, practices in kind as an acquiring of techniques and a testing of configurations for enlivening an element of the research questions through phenomena and in social or lived situations.

common traits of intelligence, creativity, memory and social behaviours.

¹⁵ Worldling is a term showing up in philosophy, literary criticism, digital studies, cultural geography, cultural studies and anthropology. It is a way of approaching wholes, systems, networks or culture in ways that account for emergence, the assemblage of disparate entities, and the experience or situation of being “in” something. Katie Stewart, 2014, *Worldling* course outline: <https://liberalarts.utexas.edu/files/m6GpmqeUrg>

¹⁶ Sensing environmental stimuli and responding through movements such as circumnutations, tropism, phototropisms, or touch response/contractions such as in the Mimosa pudica or the sensitive plant.

One of the major influences and inspirations for this project was the feminist theorist of Science and Technology Studies (STS) Donna Haraway who wrote about “stories in which multi-species players, who are enmeshed in partial and flawed translations across difference, redo ways of living and dying attuned to still possible finite flourishing, still possible recuperation” (Haraway 2016, 10). For this research project, this meant creatively responding with beings who have been designated to positions outside of the spectacular, the dominant, or the fantastical, yet who are, despite their minoritarian positions — thriving in a sense. For example, globally distributed commercial channels for procuring the propagation of vegetal life native to southern climates such as rainforest, tropical savanna, humid subtropical, or desert — as *houseplants* or outdoor annuals in the summer season. These domesticated versions of plants and trees, usually much smaller in size, are frequently a naturalized commodity-being in interior dwellings, especially in northern regions.

Another thriving vegetal are certain kinds of cyanobacteria or algae that cause aquatic disturbances or eutrophication due to overgrowth of blooms in bodies of water that are polluted from fertilizer run-off. Fertilizer is a by-product of commercial agriculture, an industry that domesticates and modifies many forms of life. The excess of certain chemicals such as nitrogen and phosphorus cause the algae to grow in abundance, thus blocking light and changing the oxygen balance of the water, thereby suffocating or preventing a diversity of life forms.

Domesticated natures are also those bacteria or yeast cultures grown for the cultivation of edibles in culinary kitchens and in scientific laboratories such as yeast-dough, bacteria-vinegar cultures, agar agar prepared Petri dishes, or symbiotic blends of yeast and bacteria in SCOBY’s (Kombucha culture starters or mothers). These assemblages of minuscule creatures are the basic elements of life and used in diverse culinary preparations. During this study SCOBY’s (Symbiotic Colony of Bacteria and Yeast) were grown in aquariums for multiple years and in the right conditions the cultures continuously expanded as a series of living layers stacked one on top of another. These mothers (and daughters, in each new growth layer) yielded a consumable probiotic, a health orientated beverage, *Kombucha*, as a byproduct of the digestion/fermentation of green or black tea mixed with sugar. The culture had a subtle presence in a space through both a variably emitted scent, somewhat like vinegar, and another kind of feeling that came through caring for the culture as a form of tending to ensure the well-being of the colony.

There was something interesting that would happen with each different creature or living entity that was brought into the studio practice. With the SCOBY it was related to the actual physicality of the creature as a moist, fleshy, nonverbal, stringent, “blobular” mass where as they were cared for, fed tea each week, separated, or consumed the fermented juices, it became possible to imagine speculative narratives. For example, the existence of a primordial version of earth as an enormous matrix of interacting SCOBY’s in a terrestrial drama, *the other mothers...*

¹⁷ This kind of free-flow imagining was part of the process that developed into a kind of response, a method where the creative-research supported the emergence of stories through everyday relations with phenomena. It was an art form that built on both practical and self-sustaining ways of living from intimate and domestic relationships while simultaneously interacting with multi-species entities as collaborators in expanded configurations that could stretch out into the world.

How could creatures or natures deemed *domestic* teach one about adaptation and creative strategies for “living and dying” within the technoscientific natureculture assemblages all life is a part of?¹⁸ By caring for something living a relation is formed. What was interesting to pause and think about was how living beings change one another through specific domestic interactions. Even minute changes or influences that are barely perceptible can be differently reciprocal and symbiotic as shared responses that come into being through overlapping territories.¹⁹ When sharing space with living creatures, intuitive thinking and speculative hunches become commonplace because the various interactions keep changing. Individuals often establish their domestic spaces in ways that facilitate the tending to or caring for multiple creatures and living entities, specifically forms of homesteading in urban or rural settings. Homesteading could be described as individuals or collectives that choose to grow plant based food and medicine,

¹⁷ ...Or how the layers could present a kind of esoteric living archive in a book of “mothers” as the layers of biofilm that grow in stacks. This could be a performance of recipes for live DNA encoding with video and audio sampled from submerged sensors within the SCOBY universe as feedback... Or tracing mother’s trajectory through various locations and lo-fi-socio-specific situations back ten thousand years to an earthen pot in rural Mongolia (current origin narrative)... Or within a theory of panspermia where SCOBY is another extraterrestrial psychedelic intelligence that can entrance human towards kinder, gentler, relational expansions...

¹⁸ “living and dying” from Haraway’s *Staying with the Trouble* (2016). Haraway focuses primarily on her relations with Cayenne Pepper (Australian Shepard) in her ongoing research on companion species. She has also written on primates, pigeons, dolphins, ...and many more creatures.

¹⁹ For example, I suspect the SCOBY environment (or the drink itself) also acts as an antibacterial or immune system enhancer as I can’t recall having had a head cold since I’ve starting working with them.

compost food waste back into the soil, grow cultures and ferment edibles, collect and use rainwater/grey water, raise poultry or animals, among other activities. This lifestyle is understood as being part of an ecology-oriented philosophy for finding alternatives to commercial (mass scale) systems of production. What is interesting within domestic relations are the continual possibilities for forming interactive or co-creative relations with domesticated, urbanized, or shared-territory²⁰ beings as a way that incrementally informs one's ability to respond. It is in line with developing an ethics of response (and respect as per Haraway's description of companion species, 2008) and inclusion through relations that are already established yet have not been given much attention in artistic or contemporary art context. This doctorate project explored relational networks through visual and media art by including multi-species players like houseplants, Baltic Sea algae, or SCOPY's, in open narratives and in configurations for play. A playful approach to emerging narratives among relational encounters was taken purposely so that possibilities for generative, unfamiliar forms of experience would have the chance to percolate.

Section Overview

Part I, *research-creation as a companion species*, discusses how research-creation acts as a companion to academic research in the humanities and social sciences. More specifically, the chapter expresses how this research-creation study became a form of contemporary art practice that performed an expansion of possible relations and interactions through generative art propositions as incremental research. Using performative methods and continual revision with each subsequent artistic concept, it was my intent to level relationships among art-idea, artifact and audience.

Part II, *radicle assemblages* embraces the concept naturecultures as an alternative to the historical nature/culture paradigm. In portraying examples of the artworks completed during this study it becomes apparent how the research-creation practice produced methods such as performative relations, spontaneous narratives, and acts of intimacy with domesticated natures. This section details an experiential installation that involved vegetal beings in different phases in

²⁰ A space or place where creature's territories overlap - a squirrel's territory may overlap with my territory on a terrace.

An Inquiry into the Case of the Extraterrestrial Botanist 2012-2017. Through this artwork, domesticated natures are positioned in compositions that act as interventions from normative modes of thinking or engaging living entities. Those that have been socially constructed to exist solely as commodities or scientific workhorses such as domestic plants, plant-clones and Spirulina are placed into artistic contexts displacing such connotations. The art works materialized from a practice of feminist performance art merged with new media art and DIY biology (citizen science). This coupling valorized the unique subjectivity or identity of the performed relations with domesticated natures in forms of public dissemination that emphasized generative, sensorial and responsive art forms. Through the different artworks and in relational activities with tending and interactivity, a concept formed referred to as the *radicle assemblage*. The radicle assemblage was a repetitive motif for thinking with differences among beings that are unique, yet are also unfolding together in shared and overlapping territories.

Part III, *more-than*, illustrates how various artworks created for this study developed an ethico-aesthetics (from French philosopher Félix Guattari) though the use of speculative narratives. The initial research-creation methods began through practicing care with plants in tending, assisted reproduction, propagating fungi, as well as techniques for amplified perception through time-lapse and microscopy. With these different forms of research, fictional places within or parallel to the everyday emerged as stories to be materialized into installations and videos for public imagination and contemplation. What solidified through this research-creation practice was the adoption of non-commodity based propositions to inter-connect with everyday practices in engagement with multi-species communities. This chapter provides further description of how materials, narrative, and creatures are entangled and lend to the co-creation of works in *Automata for Colour*, 2010-2014, and *The Temporary Archive of Ambiguous Objects*, 2012-2015. Attention is honed to creatures or places that do not speak in human-animal's language per say, but contribute other expressions or versions of storytelling in alternative modes of liveliness.

The conclusion provides a summary of the central ideas from the text and reflects on how the projects morphed together as an interacting cluster for interdisciplinary research that contributed to conversations on becoming increasingly responsive and responsible as a practicing artist. Questions and concerns are outlined for future research.

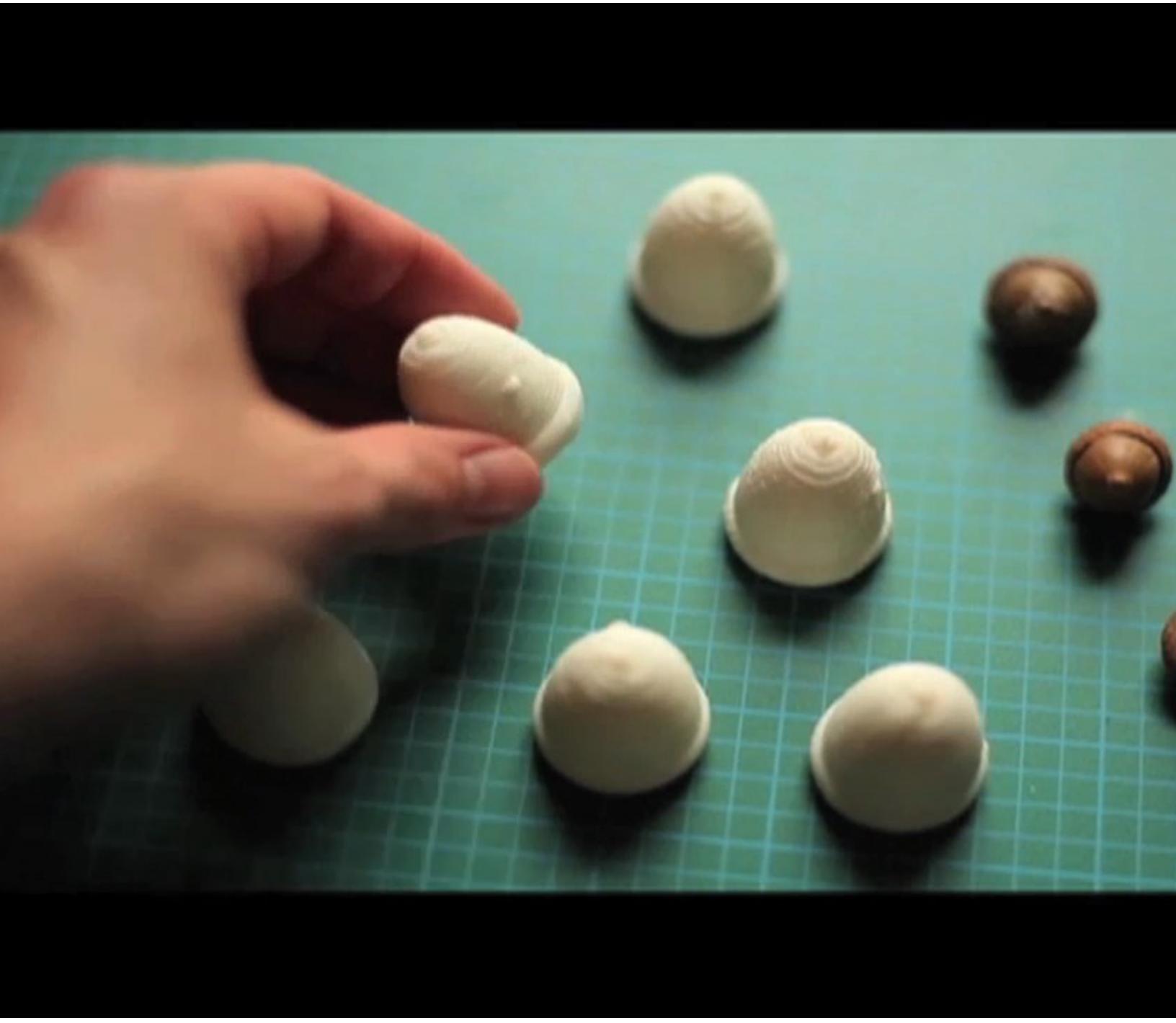


Image. *In Search of the QR_ebra Plant* (2013) Gatineau, Seed Tombs



Image. *Animated Landscapes: Lilipod* (2010–11) Media Lab Prado, Madrid.



Image. Studio Growroom (2011-12) Montreal.



Image. *Agar Agar Architecture* (2010) Montreal.



Image. *Animated Landscapes: Lilipod* (2010–11) Toronto.

Research-Creation as a Companion Species?

To hold in regard, to respond, to look back reciprocally, to notice, to pay attention, to have courteous regard for, to esteem: all that is tied to polite greeting, to constituting the polis, where and when species meet. *When Species Meet*, Donna Haraway, 2008.

How can research-creation act as a companion to traditional academic scholarship? In this study the artistic practice was conceived as ongoing fieldwork that interwove material investigation with conceptual knowledge-processes. Theoretical concepts were engaged through textual inquiry and the interactions or responses created existed as material and technical productions as experiences shared within a public context. Each project commenced with the production of a conceptual/contextual text, sometimes a poetic script or short experiential narrative in reference to interrelated concepts or potential interventions. This was a form of response as a mode of emergent dialogue loosely aligned to concepts to be articulated through aesthetic forms or configurations involving participants. The use of a research-creation methodology provided a deeper relation to a question through the continual revisiting of theoretical texts with each subsequent iteration of an artwork that was developed. However, because research-creation is emerging and quite experimental, each practitioner continually develops their own process for articulating the outcome of creative production and how their work contributes to a specific field/s. In many cases, this contribution will be documented through text or as a dialogue, especially following a material production phase. Finding a mode to integrate knowledge, reflections and outcomes of an artwork's research component back into a theoretical location is one that requires the artist to shift roles from that of a material practitioner to a critical respondent. In my experience, this was a challenge and I would suggest to someone newly pursuing a research-creation practice, that each project is accompanied by a reflection text based on the material experiences and the novel processes that evolved. For some of this study's projects, this was completed, and it made a difference when reflecting back and compiling the artworks as a coherent research component. This process differs from a traditional academic study where the central inquisition is solidified in the early phases of development and research would be directed towards the question. However, nonlinear, intuitive forms of process and knowledge-making within an academic setting contribute to the formation of alternative

pedagogical methods. Methods that support experimental or intuitive concepts attract different kinds of thinkers and research topics. The diversification of people and ideas within academic institutions is necessary to address positions that have been marginalized or that are minoritarian. In my work, I focused on vegetal, bacteria, fungi, and yeast beings. However, it was not a scientific-biological study, where it would be normative to conduct physical experiments with such entities. In my work, it was the act of attaching an aesthetic, a cultural, and a relational aspect to these beings that made the work unique. Such creatures have not been included as players in a Western, anthropocentric context when it comes to valuing living beings or creating knowledge within shared and intimate domestic spaces. Yet, these beings are the foundation for much life therefore creative inquiry in cohabitation provided additional perspectives on multi-species relations focusing on care and response.

Research-Creation as Intervention

Communications Studies theorists Kim Sawchuk and Owen Chapman discuss research-creation as an emerging methodology within Canadian Universities as well as in academic and arts funding organizations (SSHRC, The Canada Council for the Arts) as a being a “form of intervention precisely due to its experimental, often processual nature” (Chapman and Sawchuk 2012, 11). They discuss how research-creation “typically integrates a creative process, an experimental aesthetic component, or an artistic work as an integral part of the study” (Chapman, Sawchuk, 6). I articulate my use of research-creation to provide context and to specify that I purposely set out to differentiate my doctorate work from “argumentative form(s) [of thesis’s] that have typified much academic scholarship” (6). This is because in a research-creation process “theoretical, technical and creative aspects are pursued in tandem so that scholarly form and decorum are broached and breeched in the name of experimentation” (6). Due to the subjective or situated forms of knowledge that this kind of research entails through creative practices, a research-creation methodology is aligned with the open-ended and conceptual processes that became part of my artistic process. Research-creation intentionally generates forms of knowledge through alternative methods as “the role of intuition and feeling” are a valued and valid component of a research process (12). By alternative forms, I mean than instead of generating a research topic primarily through readings of theoretical texts, argumentative

composition, or the organization of subject-based research or archival data, as in the social sciences or humanities, the form of research I undertook was a process of generating concepts from multiple sources (readings, lived experience, studio experiments), and materializing these concepts into physical experiences shared within a public context. The research outcomes took the form of additional ideas generated through this process with reactions from participants that propelled further examination of the subject.

In this study, while continually reading and thinking with concepts (nature-cultures, radicle assemblages, performative art installations, living archives) efforts were divided between formulating artistic proposals influenced from texts and the production or materialization of interpretations or readings of concepts through developing art works and non-directed studio experiments.²¹ Research-creation is a series of trials and errors and a giving over to subjective articulations where unexpected concepts are generated from each preceding project. For example, when working on the project *Culinary Cultures*, 2010, I designed performative gestures for edibles and plants used in laboratory research (mother-cultures, yeast, agar agar, plant clones, pollen). This performance began as an edibles garden performance for my BioArt class in the greenhouse studio I occupied at Concordia University and then expanded to a collaborative exhibition with artist Alison Reiko Loader at Latitude 53 in Edmonton, *Culinary Cultures of the Kinder/Garden*, in 2010. One of the materials that was discovered through this work was agar agar, a dehydrated seaweed that when added to boiling water, sugar and nutrient becomes a growth medium for lab cultures grown in Petri dishes. It is also a super-robust gelatin (and a vegan alternative to bovine gelatin) that can be used to sculpt and build soft structures. It's a liminal material that is live, not-live, a habitat for life, and somewhat ephemeral as it dries into a near translucent powder. Alison and I had many ideas while *playing* with the agar during our exhibition so as a result we designed another project *Agar Agar Architectures*, 2010, based on 3D printed microarchitecture forms for sculptural casting with agar agar and bacterial mapping in public spaces. I used agar again in the project *SEA-jellies*, 2011, where I collected different cyanobacteria from docks around the Baltic Sea to make a performance with “edible” (not really) jellies that reflect on relations with polluted water to evoke conversations on living indicators (bio-indicators) in the sea. Agentic matter such as agar agar (or plants, bacteria’s, yeasts) that

²¹ These artistic concepts are usually in the form of a proposal for an artwork as a 3-10 page text summarizing the idea, detailing the context or relevance, the form of research, materials, and sketches.

complicate material relations, coupled with theoretical concepts (Haraway's work with companion species for example), ignite artistic experiments that lead to the formation of relational placemaking. Places shared or composed for the unfolding of multi-species relations emerged from curiosity and a willingness to expand sensory and perceptual presets. To form a relation with a gelatin mass through a narrative that positions a human body as affected or responsive to this entity was an exercise that demanded imagination and a shift in preconceived ways of knowing oneself in the world. Contemporary art, as a field of experimental knowledge production through matter, provides a platform for this mode of disconnecting from the day-to-day to immerse an audience into unique relational configurations.

As this research-creation project was material based, ideas were often presented in non-textual forms as concept sketches, installations, video animations, or text-based proposals. Learning to interpret the *affects* that emerged from the artworks into conceptual contexts was the key objective in working within a research-creation methodology. By creating a system for understanding or articulating what it was that I created in the world, by communicating what emerged from the process of research, material-relations, and public dissemination, the research-creation methodology becomes a companion to academic scholarship in the social sciences and humanities.

Material-Semiotic Acts

Conceptualizing with materials in doing and making—*material semiotic acts*—were part of the process for generating ideas on how to proceed within the research-creation practice. Learning to become aware of the interconnections among beings was part of the research by taking account of earthbound social relations while making space for the expression of unique subjectivities. How could I generate a positive force, an *ecosophy* of possibilities that cultivated discussion? Continual interventions that interrupt the normalization of activities that sustain colonial systems of oppression, destruction, and manipulation of beings and geo-places can be part of an everyday practice. As art theorist T. J. Demos suggests in *Decolonizing Nature*, the best artistic models “join the aesthetic dimension of experimental and perceptual engagement with the commitment to postcolonial ethico-political praxis, and do so with sustained attention to how local activities interact with global formations” (Demos 2016, 12). Practices of *away*, out-

of-sight-out-of-mind, *garbage*, the vitrification of tons of nuclear waste to be embedded deep in the earth, reserves of commodities such as grain and seed—these are all practices from a modern legacy of extractive capitalism and colonialization. To feel entrenched, weighted under the unknown realities of perpetual earthly damage is only increasing in the extent of how various acts of the past will eventually be expressed in the future. A majority of “normal” day-to-day activities are entwined in planetary convergences such as driving a car to work, plastic everything, drinking coffee grown far away, manicured lawns, indoor plants in pots, selectively bred lapdogs, or working on a laptop full of rare metals mined through invasive, extractive industries. All these seemingly simple, everyday occurrences, or modified creatures, have a certain kind of implication in resource extraction, mass production, and global distribution channels. As the research progressed over the course of the doctorate study, so did a sense of the importance in contributing in a better way by learning to generate acts that explored, rather than mediated, multi-species relations through performative aesthetics and material accounts or stories.

Doctorate Research-Creation Phase I

Transplanted and transported into a pot, a container, a compartment—or an apartment in an urban centre. One of the initial concerns was centered on how aesthetic contemplations can expand upon an assortment of possible gestures towards developing empathy with differently perceptive beings. How do individuals create ways of knowing from their unique yet often overlapping perspectives? As this study was centered on multi-species assemblages with domesticated beings such as houseplants and yeasts, agar agar, snails, Spirulina (cyanobacteria), fungi, environments were created to sustain playfulness and dialogues using speculative or semi-fictional narratives. This “environment” design through art projects and installations included imagining a liveliness beyond my own perceptual abilities as an extenuating gesture—perhaps slightly animistic, strange—but nonetheless, into an ecology of being more aware. I sincerely desired to become more plant like, increasingly mycelial, and to explore and engage with the kin-mates that I shared intimate spaces with.

In 2010–11, I occupied a studio space at the Concordia Greenhouse in downtown Montreal, where I worked from a kind of pseudo-scientific, systems-based design and experimentation with

electronic media, performance, plants, and synthetic materials. Plants were conceptualized as biosensors or switches incorporated into computational, process-based artworks. Performative aesthetics were borrowed from laboratory processes by working with edibles and clones or agar agar composed into micro-architectural environments. In some of these experiments, plant-human assemblages synthesized plant movement in relation to ideas of interspecies choreography through the digital mapping of plants' circumnutations and tropisms, using algorithms for interactive data visualizations to then generate co-choreographed dance parties for plants and people (Appendix, *Disco for Darwin*, 2010).

Different versions of material processes and concepts were enacted with plants and fungi, with the living phenomena composing a mediation on the act of the *transplant* combined with aesthetic concepts and mediums. At the same time, I was aware that digital sensors are anthropogenic devices for honing in on a subject and reading *objective* alterations in movement, temperature, light, and the presence of specific chemicals or elements. These readings are measurements of environmental shifts against a set of constants where feedback is predetermined against a scale of certain possibilities. Sensors are lively but not alive. Rather, they are a binary representation of life through digital language as a syntax and a set of codes. It was through a slow process of experiential trials that different ideas for how to be with other beings would emerge. Many of the studio projects created during this study were located simultaneously in digital spaces and earthly places. By working with vegetal beings and electronic technology, I was challenged to expand a definition of *network* by focusing on material relations through blends of synthetic and organic forms like infrastructures such as plumbing systems or planetary rhythms, or such as pollen dispersed in wind currents. Other such configurations included mushroom mycelia or the rhizomal as inter-dispersed connections among natureculture configurations. These networks were explored in flows of water, the dispersal of colour and nutrient in hydroponic sculptural systems, and generative processes that expressed emergent variables. The intention was to articulate a mode of thinking with an expression of networked performativity that was subtler than previous pre-articulated or defined dichotomies of virtual/physical, screen-based/in-person, digital/analogue *networks* that I had explored in

previous projects.²² Simplistic articulations of what could be defined as local or virtual, physical or digital, were not as relevant for this phase of research-creation. The idea of complicating relationships with the technological was the incentive for placing vegetal life into aesthetic assemblages. The plants informed a deep curiosity towards articulating transitions visually or sensorially through multiple phases of material-semiotic modalities inherent in growth cycles. Another motivation within this project was to challenge and explore the idea of representation in the visual-arts/contemporary art. What kinds of responses might be generated by including plant life or aspects of another life as a direct subject matter that was not abstracted, stylized, or represented?

Alike plant rhizomes and mycelium growth underground, online digital platforms and networks are practical for providing communication channels and accessibility to individuals to connect and share information when earthly conditions are in flux. But, the internet is a historically contingent entity developed out of institutional government surveillance and military research. Corporate interests are often masked behind applications and websites for entertainment and social activity. Virtual space echoes the problems that are unfolding on earthly terrains. It is timely to think toward the propagation of online activity and projects that are ecosophic, mycelial, and community-oriented. Ecological thinking is about learning to observe and depart from colonial or capitalistic histories marked on places and bodies by noticing the sedimentation of residues. How do such residues interact with life in dynamic intervals of change and a further condensation into place?

These questions were part of the production of propositions to draw and sustain attention while exploring qualities of difference and connectivity among phenomena. This study was also about play and performing into and with materials to let go of self-consciousness, critique, and expectations, and to allow what could emerge to do so. This modality occurred when in a flow,

²² My Masters research-creation focused on networked performance art: “Desiring Machinations of Matertekhnologi” (2008). An individualized, multidisciplinary thesis and studio art practice that synthesizes feminist frameworks with new media art to investigate the mediated body in relation to communications technology. The thesis illustrates contemporary, twenty-first-century artists working with feminist strategies, the body, performance, and technological media. Theoretical discussions are developed that imagine or suggest new forms of subjectivity, which may be experienced through artistic appropriation of communicative, networked, and technological media. These discussions include my studio investigations and unfold around the following themes: corporeal feminism, body-based philosophy, a subversion or manipulation of consumer technologies through intervention, appropriation, and performance, the politics of space and location through networked interaction, and the mediated body in relation to communication technologies through a valorization of embodiment and the senses.

or when making or playing with objects and narratives simultaneously. It became a meditation to immerse and lose the self within a space or set where *things* become malleable. Objects, beings, techne, and many other phenomena form networks comprised of aesthetic variables in a perpetual state of becoming as novel natureculture assemblages. A portion of the experiments that were condensed into artworks share narratives within different apparatuses while testing out what location or site means in relation to a given technological device. Many of these projects involved the creation of somewhat intuitive forms of technology. For example, *Animated Landscapes: Lilipod* (2010) turned environmental and sensory data from underwater habitats into hand-drawn animations; *Automata for Colour* (2010–14) produced a living, cellular screen event, animating colour changes through the chloroplast of flower petals; *The Temporary Archive of Ambiguous Architecture* (2012–15) incorporated 3D printed fungi spores that would grow their own emergent patterns. Each project contributed unique qualities and methods as an unraveling or production of questions that lead to consecutive inquiry and further projects. This was a rhythm that developed through the research-creation methodology in unfolding a material-discursive mode toward resolving and understanding how I could continually de-centre the practice. This was a strategy for working toward a place that simultaneously felt connected and contributed to a deeper comprehension of composing within an ecology of relations.

Doctorate Research-Creation Phase II

The artistic studio practice could be conceptualized a series of methods for evoking narratives with objects. Narratives were informed by a kind of extended intimacy with a place through touch that also created space for subjective experiences. The studio practice was centered on attempts to shift nearer to narrative-objects that were positioned in the margins of anthropocentric thought, sidestepping concepts that impose causality and order onto life. In the studio-based projects illustrated throughout this text, I explored material transformations and located particular sediments that had a tendency to stratify. Using a method of transition or metamorphosis through different material states disrupted stable formations articulating constant movement and transformation of phenomena.

Through working with plants and other earthly beings, my perception was altered from a somewhat instrumentalized conception of interactions to something a little less definable. This

heightened level of subjective intuition became an important part of my identity so that I can now connect to things more felt, less recognizable, or knowable. Recognizing this shift signified an evolution in my research and artistic process. At this juncture, there are now a number of questions engaged when I develop a project: What is it that this assemblage enacts? What kinds of intelligences are expressed? What is the essence of a particular performative gesture now in this moment? How does duration enact within a set of material configurations?

At the close of the doctorate project, a series of conceptual goals were identified for subsequent aesthetic and research-based projects. First, a continued focus on ecological issues and anthropogenic climate change from diverse perspectives with an effort to articulate the importance of becoming increasingly perceptive of relations among different phenomena. Second, to understand and identify, in a concerted effort, the ways in which colonial practices emerge in visual media, language, and daily life, and, when possible, strategies or dialogue to address and challenge these occurrences. Third, to expand the narrative context from primarily semi-fiction and speculative concepts to examine knowledge that can emerge from specific places—both from the past, in a geological duration, and the present. This involves deeper self-reflexivity, or auto-ethnography, by locating an immediate position or a series of identities inside what it is experienced.

An Art of Response

Philosopher Michael Marder focuses on the notion of *self-respect* in elucidating an ethics that queries whether a self-respecting individual would inflict irreversible damage on the environment. Marder points out that in a modern trajectory, animals and plants were considered neither persons or things; they existed in an excluded middle, and therefore they trouble the traditional distinction between the respectable and the merely utilizable (Marder 2014, 117). Recent research in plant communication and signaling has recognized that plants have complex communication abilities and social behaviours, that they thrive on the nutritional assimilation of the products of their past growth, and can easily adapt to environmental stress through transcriptional reprogramming (143). Marder proposes that, “in decentralized, nonsystematic plant and human communities, the models of coexistence do not posit the subservience of parts to the whole but the interdependence of relatively autonomous parts” (140–41). In this respect, a

focus on an empirical subjectivity of fragile living bodies will lead to new understandings of different structures or modes of address: “where a life speaks to another life, unchained from the exigencies of theoretical and practical reason and from the requirement of vocalization” (146). Multi-species performative aesthetics can focus on those with unfamiliar modalities, on beings whose existences are difficult to conceive, or as Marder suggests where, “the silent address of the plant, which communicates its distress otherwise will attract ethically motivated attention to its precarious life” (146). This subjective and ethical inquiry is part of learning in an eco-aesthetic practice and various responses took form in the artworks as ethical issues arose. Some examples included incorporating domesticated plants into art events and not acknowledging their trajectories as commodified beings. Or, in regard to human mastery, using processes developed to automate the habitats and lives of plants with synthetic nutrients and fertilizers as sustenance for plants in hydroponic installation projects. Another issue was placing living plants into unsuitable environments, such as an art gallery that was not properly lit or used invasive scientific processes upon them such as tissue culturing. By initially working with vegetal beings in domestic or institutional situations many of the ethical issues stemmed from a site or material specific reality. Plant life can be brought into an environment such as a gallery, a greenhouse, a space station, a studio, an apartment, or a laboratory but how does such a transport-transplant change what it means to be living as a being subject to such habitats or simulated environments? As well, how does one account for being an individual who continues to place other living entities into these particular configurations?

Performative Aesthetics

By addressing a connection between human psyche, site, and the acknowledgement of ecological issues, artists who propose ideas can help us to understand ourselves in the present as well as the specific locations trajectories of thought have emerged from. Research-based aesthetic practices explore current modes of representation and can critically reposition or highlight problematic cultural memes (as in the activist aesthetic approaches in 1970s feminist video art or Dada photomontage). In relation to vegetal and multi-species relations, material research provides a broader understanding relating to the necessity of cultivating existing sympoietic networks. For example, protecting or expanding natural areas in rural and urban

places for the expansion of mycelium and vegetal communities. In an urban context, this could be achieved by making space for diverse growth of native species plants vs. lawns (non-native grass species in greenspaces). Also by using methods that increase soil health through composting and the placement of living plants that bioremediate through their root systems. One finding in this study was that a focus on simple domestic acts does contribute a positive difference as opposed to narratives that perpetuate conquest or mastery (e.g., plants in space, genetically modified plants altered to adapt to pesticides). This finding was revealed through a process of learning to perceive more and differently through a daily practice of tender curation. In this study there was a transition from focusing on utopian concepts like the extraterrestrial garden, or the automated green walls or hydroponic systems to the generation of processes that merge human and more-than-human networks; nurturing existing place-based lives (remediate, learn how to work within existing or disrupted habitats) rather than primarily exerting dominance and control through simulated/synthetic places (colonization of space, vertical farming vs. land-based). This means considering acts that reactivate and accentuate existing codependency's with beings while seeking potential sites where delicate earthly balances can be maintained, protected or reestablished.

This search and relational growth throughout the doctorate program was shaped by thinking and acting with forms of materiality among phenomena within performative contexts. The ongoing art practice aligned with shifting comprehension in different renderings of *ecologies*. Ecology can be a relational aspect shared between diverse beings at a particular time-space. An ecology may describe complex interconnections between matter and beings, and their combined actions and transitions. Ecologies are about the instabilities and change that surround and permeate creatures, places, thoughts, and ways of being. One of the ways to enact ethics within an eco-art frame is through a performative approach that takes account of how specific acts create meaning and knowing or to *let-be*. To let-be means to acknowledge that beings have unique existences and even though phenomena do interact and overlap, they effect one another deeply and much can be learnt by not enacting onto another being but, rather, by making space for unknown becoming's to emerge.

Performative aesthetics are part of material-discursive processes where by exploring material relations among ecologies an aesthetic event eventually unfolds. Material-discursive processes are those that build knowledge through performative practices, gestures within matter

rather than learning through representations of things like in reading and writing about theories via symbols and signs. In material-discursive practices, research and knowledge is enacted, is touchable or sensed, and matter acts. Different forms of relations that emerge are not entirely predictable. When a performative-aesthetic event arises from such a practice, this event could become a node for sharing sensory-based propositions with other beings where concepts become active as agential matterings.

In 2015, I visited the community squat and artist-run space Hausmania in Oslo for an informal performance²³ that introduced various eco-tech assemblages that acted to destabilize the spatial-habitual behaviors that often delineate exhibition spaces (looking, not touching, art as artifact or stable technological media, relationship of audience as viewer). In this case, large garden snails roamed freely over art objects—open books, ceramics, photographs and drawings—displayed throughout the room on the floor and on tables. Beams of interactive lasers haphazardly intersected the interior space. Visually, it was difficult to encounter the people and the things without potentially acquiring laser-exposure effects and physically it was restrictive to circumnavigate the space and avoid the gastropods that were coalescing about on the artworks. The co-choreography required to move through this place with *these* bodies resonated with performative processes when thinking together with aesthetics and differing beings. Such events produce propositions around eco-ethics, concepts constituted through disconnected relations while working with subjects based on actual tensions among multiple phenomena. Propositions that connect an apparatus such as anthropogenic technology (semiotics: a concept of optimal amplification; lasers), matter (books, ceramics, drawings on paper, photographs), environments (a human-scale room), and different beings (snails, humans) open bizarre scenarios as well as vast inquiry. How might it be to navigate through and among these *strange strangers*, theorist Timothy Morton’s term for ecological thinking where relations among bodies and things are somewhat ambiguous and resist categorization (Morton 2010)? In Morton’s mode of eco-ontological engagement, the more familiar with a “being” that something is, the stranger that being becomes.

By encountering such webs of connectivity literally radiating amidst these extenuating combinations of lasers, snails, artworks, and people in the space, various interactions and unique propositions inevitably materialize. This could be described as a kind of probing to get nearer to

²³ Artist’s names/information unavailable.

configurations that juxtapose semiotic objects with different dimensions of existence and materiality. In this complex and tangled knottiness of place is a space-time-mattering, a generative *thing* that supports a kind of temporary world-place. It is an otherworldly event as a series of emergent material-semiotic acts. The space that these acts encompasses can be encountered, can be felt, and then can be disengaged while moving away—and not just literally in space but where the perceived concept of *boundary*, such as architectural space, a mammal body, a snail body, do not imply distinct entities, but fluid experiences as a particular space-time. Acts are performed within a particular time-space-mattering, which are also connected to and entangled with diverse matter. The idea of *body* is marked through differing enactments and chimerical (one being overlapping, becoming, with another) reconfigurations. These propositions act out in multiple ways through a form of aesthetic encounter, thus becoming nodes at transitional sites. Many material-semiotic acts will be engaged in such a dynamic setting. Diverse beings meet and exchange ideas. Bacterial co-mingles or social-media contact details are exchanged and from these, other, perhaps related, but different acts, material and immaterial, actualize immediately or eventually. Snails experience exotic textures, tastes, and vibrations, or have the chance to trade information or genetic details. Lasers energize matter, exposing and engaging particles, waves, heat, vibrations, or prismatic qualities. Whatever was happening in such a space had many effects and affects. The world changes through sets of acts within events continuously. However, in an art event like this, specific propositions were tested regarding relations and aesthetics as they are intensely intensified. Accelerated versions of art-based propositions are captured and held in a tension that suggests and expels further and deeper contemplation. It is the becoming of a material-immortal location. Natureculture configurations are continually sampled or exchanged and exalted through series of trials with irregular forms and nonlocal existences (unusual acts that do not often occur like an event that transpires for the purpose of snails roaming over contemporary art).

The possibility to engage questions of ethics emerges when different bodies are brought into enactment in performative and aesthetic propositions because choosing a particular action(s) is inevitable. Choosing to avoid stepping on a snail. Choosing to collect, transport, and let loose, in a room of things and beings, dozens of snails. And, choosing to recall and represent this event in another dislocated context. Agential configurations that take place in an art installation, a wet laboratory, or the web of a specific spider suspended on a particular wooden gate, are all zones

of possible interventions. Aesthetics describe what can be sensed in the world and what seductive entraps or propositions living beings set up to attract or divert the attention or the energy of other beings. Brief interruptions unperceived and otherworldly pauses experienced as duration make the momentum, the waves for a perpetual unfolding, a tangling, and world-becoming in an overlapping of phenomena. In this section I have described a form of art practice that my research-creation attempted to enliven through or as a continual articulation of material-semiotic expressions. This practice was also a methodology that evoked a form of contemporary art for the exploration of questions that consider a world that is not organized or categorical. This is a form of research and parallel aesthetic expression that focused on relational aspects shared among living beings, artifact, and art-proposition.

Image, next page, *Audible Vegetable Visible Animal Magic Mineral* (2017-)Studio.

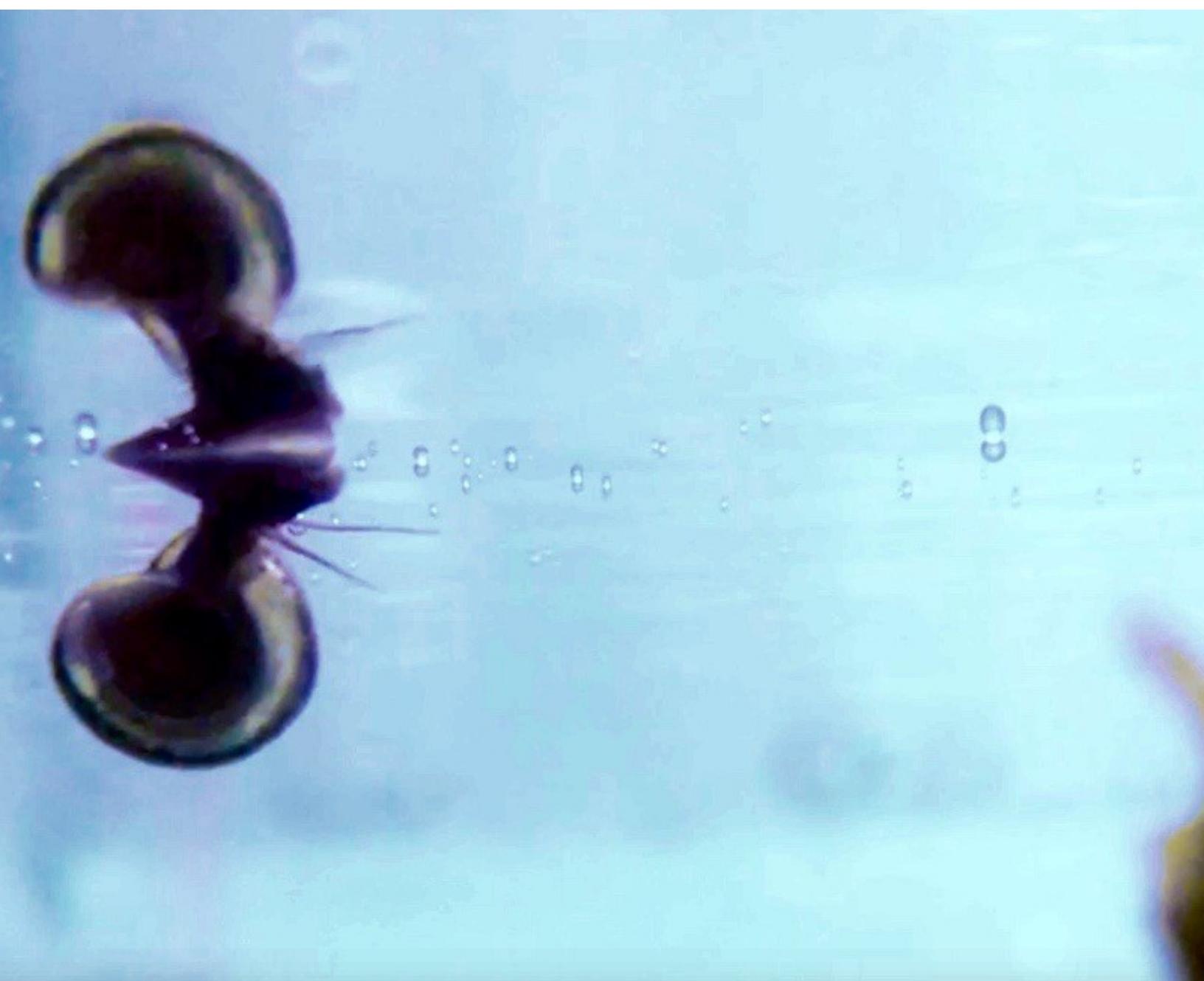






Image, previous page, *Audible Vegetable Visible Animal Magic Mineral* (2017-) Studio. Image, this page, next page, *Audible Vegetable Visible Animal Magic Mineral* (2017-) articule, Montreal.





Image, this page, *Audible Vegetable Visible Animal Magic Mineral* (2017-) video still. Image, next page, Apple snail egg nest (2017) studio.



radicle assemblages

My offering, in times of shhhllsss, sluggish cacophony: when not know, what do? Go to a meadow, under the trees, familiar, hidden, vibrant. Echoes, even ever lost sea, already ancient breeze. Surround, null, lull in eye, glare, rancid earthly breath. This is a place that I make. Cabana of dreams. Plant? Transplants, far from home, yeah, we like you, lost too. Me and you: willful, adapting, violent, desirous, tending. It is an idea: feelers focused, bones like waves, the songs will appear if you stay.

Vibrational Surround: Shinrin-Yoku. Japanese forest bathing, a concept that prescribes regular forest immersion: A short daily perambulation in a place of vegetal growth is an entering to an atmosphere rich in colour, scent, energy, gradients of light, sound, and diverse lifeforms. This structure is a place for tuning into yourself while in the company of a group of different plants. A vibrational underlay is set to tones and frequencies that will trigger different emotive states in the sitter. I encourage visitors to sit in a focused mindset. Go inside.

—Artist Statement, *Audible Vegetable Visible Animal Magic Mineral: Semi-Postanthropocentric Reenactments for a Terracqueous Orb*, Kelly Andres, 2017

In the artworks developed for this study the experiential elements were significant as ways of knowing that merged matter, bodies, and thought as continual expressions of difference through improvised performativity. Improvised performativity is a way of thinking with plants and fungi enacting in their dispersed habitats as always in transition with each contraction and expansion through growth or decay. This figuration of expansion/contraction is a conceptual point of departure that I frequently referenced for learning-knowing with multi-species encounters. It was also an aesthetic gesture to portray relational forms as thoughts or materialized acts in unique experiences of duration connecting to a specific location. Artworks that are in dialogue with the idea of improvised performativity were designed with emergent possibilities to produce compositions. It was my intent to create aesthetic events to be in a state of continual unfolding and responsiveness in what I referred to as *radicle assemblages*. Naturecultures is a concept that contributed to and expanded my understanding of my artistic practice. In the next section I describe both of these concepts and how they are connected to this research-creation practice.



Image, previous page, Apple snail (2017) studio.

radicle assemblages + naturecultures

The *radicle* is the first part of a plant to emerge from a seed. It is the initial expansion outside of the contracted husk which can only take place when the surrounding conditions are ideal for life. An assemblage is the coming together of diverse and often disparate entities. Radicle assemblage, a portmanteau of these two words, almost opposed in their directional denotation, expanding outwards and coming together, is intended to create a friction of possibilities. With the radicle emerges the life that can become a possibility where the under-appreciated or the unacknowledged become sites of growth and engaged forms of knowing. The radicle assemblage materialized from studio experiments interweaving plant life, social relations, and technologies from both anthropocentric and more-than human locations. Together studio experiments and exhibited artworks enabled explorations of the radicle assemblage using research-creation methods that formed over the practice as performative relations, speculative narratives, and acts of intimacy with domesticated natures.²⁴ In these performative and relational installations, questions surfaced as to positioning domesticated natures in compositions that could act as interventions from normative modes of existence. By engaging living entities especially those that serve as scientific or commodified subjects such as potted plants, living cultures, plant-clones and tree-hybrids, and placing them into artistic/relational contexts a shift occurred from being an object, or research subject, to agential beings composing part of a radicle assemblage.

My research-creation projects evolved with the influence of feminist Science and Technology Studies theorist Donna Haraway's work on multi-species companions, sympoietic relations, and the concept of naturecultures. The artworks explored propositions with living entities (plants, fungi, bacteria) and elements (water, minerals, light) in the form of experiential installations. I emphasized sensory cues such as sound, smell, touch as well as speculative narratives regarding human relations with ecology through video and multi-media installations.

²⁴ Studio work or studio experiments comprise a significant amount of creative research that is not offered for public dissemination. It often contributes to finished or ongoing artworks that are publicly exhibited.

By fabricating each artwork with a number of sensory cues and an open framework for comprehension, it was my intention for visitors to conceptually navigate their experience based on their unique and subjective positions. My motivation was to encourage individuals to form emergent experiences from encounters within an artwork in an attempt to bypass dichotomous figurations of nature/culture as separate, but rather, as complex parts of one another. Haraway proposes the term *natureculture* as a synthesis of both the conceptualization of the separation of nature/culture as a culturally specific ontology, and the simultaneous undoing of multiple assumptions. The joining of these two words recognizes that the concept of nature is embedded within distinct cultural locations. The word *nature* is one way to understand or relate to what is exterior to a body—a mode of comprehending existence for many individuals. As a term, *naturecultures* pushes further and acknowledges that this dualism, these seemingly separate and different terms are actually one relational thing. Nature separated or deleted still maintains the dualism, but when the terms are merged, this conveys the reality of an encountered fusion. The term accesses a way of thinking anew what a permeable continuation means when embedded within a multi-species reality. Instead of defining things or places as the terms *nature* and *culture* do when separated, *natureculture* describes active and dynamic relations in an ongoing state of becoming. Naturecultures describes both the *why* and the *who* of the beings and the materials that conduct acts or events relating to an ongoing flux of living within and among the world.

Excruciatingly conscious of nature's discursive constitution as 'other' in the histories of colonialism, racism, sexism, and class domination of many kinds, we nonetheless find in this problematic, ethno-specific, long-lived, and mobile concept of something we cannot do without, but can never 'have.' We must find another relationship to nature besides reification and possession (Haraway 2003, 64).

A natureculture assemblage is a mode of thinking with certain entanglements composed as complex networks of phenomena and narratives. These are historically constituted phenomena, or what could be understood as living beings socially or culturally intertwining through actions and matter. The term naturecultures was first used in Actor Network Theory in Science and Technology Studies (STS) by sociologist John Law and anthropologist and sociologist Bruno Latour, and was further adopted by Donna Haraway to account for relational connections or the inseparability among different beings, matter, and anthropogenic events as

constituted through techno-science or other cultural apparatus.²⁵ Naturecultures is a concept that entangles living beings and matter, cultural systems, bodies, and thoughts, as well as language, or other forms of communication.

Haraway discusses how the immense resources procured to stabilize, materialize, police the boundaries of, travel into, preserve, diversify, and represent “nature” constitute our own fictions. For Haraway, nature is not a physical place one can enter, nor a treasure to save, it is not hidden, not a language to be read via mathematics, nor is it the “other,” who might offer us origin, replenishment, or service (Haraway, 67). Rather, the term *nature* is only a concept, as well as an implosive fiction. Haraway asks, “Haven’t we been convinced (by ecofeminists and intercultural radicals) that nature is not to be seen in the guise of the Eurocentric productionism and anthropocentrism that have threatened to produce all the world in the deadly image of the Same?” (67). She suggests that humans must let go of “stories of science and tech as paradigms of rationalism and refiguring the actors in the construction of the ethno-specific categories of nature and culture” (67). This means a meshing of beings categorized human and more-than-human, and special attention given to the use of language as words emerge out of specific kinds of relations. As an example, Haraway discusses the term *organism* as stemming from practices that render living beings as without agency:

Organisms are made as objects of knowledge in world-changing practices of scientific discourse by particular and always collective actors in specific times and places [....] Organisms are biological embodiments; as natural-technical entities, they are not pre-existing plants, animals, protists, etc., with boundaries already established and awaiting the right kind of instrument to note them correctly. Organisms emerge from discursive processes. Biology is a discourse, not the living world itself. (Haraway, 67)

In this text and my projects, I attempted to avoid using overarching categorical names or clumping together groupings of beings such as *organism* or *species*. This was challenging yet consciously setting out to describe phenomena using specific terms for beings or to make new terms that describe different kinds of relations was important. Relational issues are embedded as part of the development of such a particular language and ontology. When it is possible to no

²⁵ Haraway (1997) signifies inseparability of the natural and cultural in technoscience and a rejection of humanist ontological splits in modern traditions, see Latour (1993).

longer conceptualize body and self as distinct from diverse phenomena, different descriptive words or phrases will come into use. Language emerges from semiotic acts and events and from the ways in which relations are enacted. Performative acts can intuitively shape relational concepts through propositions that articulate possibilities for forming and decomposing ways of existing in the world with diverse beings. *Not* placing a new category or name on an experience that is nonverbal (sensed or felt) acts as a contour around or through an experiential mode. Understanding and acknowledging that experiences are based on emotive interpretation can support the illustration of examples through nonverbal gestures. Relaying intuitive and open-ended ideas to discuss difference and beings will then be uniquely comprehended based on an individual's subjectivity. Words-of-comparison may serve as a limitation or a squeezing of something out of a feeling. Words such as *nonhuman* are used, by default, to classify and separate. This occurs when there is not yet an appropriate, thoughtful, or uniquely descriptive way to think about relations between or among different beings. Often a term used to describe a comparable function in a human is placed onto an emerging understanding, especially in regard to developing a way to discuss and engage within multi-species relations. The following body of work *An Inquiry into the Case of the Extraterrestrial Botanist* (2012-2017) articulates a sampling of my artistic experiments while thinking with the concept naturecultures.

An Inquiry into the Case of the Extraterrestrial Botanist (2012-2017)

There is often interest in things extraterrestrial: a minor slippage in the security division of consciousness. Self-identified spectral beings, migrational, non-territorial, forming, preceptive.

Is it a challenge to animate the objects in your Earthbound room?
Sometimes.

Constant space between each breath.
Dark hollow made with fingers, hands clasped. Between I's ears, this quiet place of perpetual existence. Echo chamber, each new grotto, beauty, force, ancient long face. Memory lubricated, supercharged aqua too. Primordial, deep, deep, slow, long blue.

Do "I" breathe? There is no I.

It is not unfamiliar, alien topology, a hazy potential.
Sumerian artifacts, stone tablets, Tree of Life.
Why plants became trans: Planted, ported, -lated, mutated. For what intentions?

Who spoke for these acts? Why uproot? Paleo-plant-prosthetics.

Is human perception of vegetal an intermediate scaffolding between dimensions that are created as exterior world and a buffer zone? A place that is yet to be known? Like interwoven shrubs in a labyrinth. They appear to be one being. And in a way they are, but not in the way of being individual or separate.

Vegetal surrounds perceived as unfamiliar may lend to acute confusion. To be lost in an unfamiliar grove or ravine. Unable to distinguish between different trees and grasses. Feeling of suffocation, enclosure, panic.

Could plants, in this sense, to some, be a placeholder for what a self does not yet grasp or comprehend? A projection or manifestation of unused cognitive potential.

Example: A “hedge” creates and segments non-usable space around buildings and between transitory pathways. Seemingly homogeneous, utility-based plant architectures that appear to be externally located outside the building or around the park are underutilized locations of semi-conscious mind. Move closer.

Plants been negated in terms of philosophical thought when assigning value to beings based on perceived hierarchies of defined sentience.

Try to engage a conceptual algorithm, a thought experiment grounded in VI: Vegetal Intelligence, partial or analogous to gravitropisms, circadian rhythms, phototropisms. A gentle recall in chimeric cellular memory, contracting and expanding, Goethe’s *Urpflanze*, continuously sensory, volatile, chemical.

Seek emergent patterns, disturbances, vibrational sequences. They appear in the idea of earth and the atmosphere, in the plants, creatures, and rocks, in the everywhere as an ever-worldling. Roots, rhizomes, brain neurones, electric circuits, tree rings.
Observe snail shells expanding, then collapse in the dead-growth water-table, the evaporated drought-ridden stream, reverse growth.

Remineralization. Fractalization

Does human-animal oscillate between a material and bodily based figurative, a caricature of extraterrestrial due to an intense sense of estrangement?

Or.

Is it all in the spectrums of thoughts, the thingy-things that ultimately shape the exterior world through consciousness?

Communally contemplate possibilities for intra-dimensional voyage, kinship, and symbiotic bonding between earthbound beings.

Salt water attracts, bonding around not-I’s spheres, dynamic soft-shell, flexi-coral, globes spontaneously ignite with each encounter, glandular, emergent masses form, organic turbines congealing in the oceans, unscalable threshold, energy hive, slick, translucent, phosphorescent, thrumming.

Departure ensues as critical mass is attained. Assembled, the swarm is mobile again.

—artist's text from *The Extraterrestrial Botanist* series (2017)

The Extraterrestrial Botanist was a speculative-research project in experimental relations among vegetal beings and humans (2012-2017). The work explored estranged relations with vegetal life and the impact certain practices in science and technology have in separating intuition and feeling from plant-human relations. One can speculate that this separation was developed and sustained through modern systems of categorization, imaging techniques (microscopy, time-lapse), Cartesian figurations of human vs. nonhuman, and laboratory research techniques that remove plants from their habitats such as in tissue culture or hydroponics. The project was also about thinking of how one is affiliated with the earth — as in earthly relations as an earthbound body. In each of the installations within this body of work, concepts were traced and research was performed in material practices as a way of thinking with naturecultures through hands-on experience with the socio-cultural *techné* in question. From this perspective, I could reflect upon or discuss why, for example, tissue culturing may have presented personal ethical issues or certain responses that arose from a kind of knowledge based practice developed through a series of intentional decisions. After adopting specific practices or techniques (growing plants in vitro), the process of thinking with a particular position becomes substantially more complex, subjective, and situated. *The Extraterrestrial Botanist*, transitioned from an initial installation featuring fictional plant-sensing sculptures modelled on the ruins of an abandoned subterranean lunar research station to a video installation with suspended air plants, fractal 3D printed sculptures, and vibrational instruments.

For the first iteration exhibited at Cirque du Soleil HQ in 2014-15, *Enquête sur l'affaire du Botaniste Extraterrestriel*,²⁶ I conducted technical and material research in order to understand and use hydroponic plant systems, to research the history of and propagate with tissue culture, to research, and model plant signaling concepts that rely on reading electronic pulses from living entities. This work was centred around a narrative didactic panel:

During the space craze of the late 1960's and early 70's, the Apollo missions sent various astronauts and equipment to the moon to collect samples and test the suitability of sustaining life outside of Earth. One project remained veiled to the public – the establishment of a long term

²⁶ An Inquiry into the Case of the Extraterrestrial Botanist, 2014

subterranean station for the purpose of conducting research in extraterrestrial botany and living systems. The station would be overseen by one lone scientist – when, or if return to Earth would be possible was unknown. In light of NASA's recent announcement for a moon mission to conduct new research and test the effects of plant life on the surface of the moon, some of the work of Dr. Kellen Anders, the scientist from the classified lunar station, has been revealed through a number of plans, descriptions and films taken from the station. This exhibition features models and objects ranging from plant tissue culture and microscopy, scaffolding from an experiment in plant communications, and a modular grow system.

The installation consisted of a hydroponic growth chamber with video monitor and animation, four light boxes and microscopy photographs, a plant signaling sculpture with electronics and air plants, and a plant tissue culture chamber with one hundred living potato plant clones. Each of the individual artworks referenced a significant research and material production phase. The hydroponic growth chamber was designed to be suspended to the walls as a series of modular units connected to one another through vinyl tubing containing water and nutrient as a kind of living mural. Each modular unit was made from found Styrofoam inserts from consumer electronics. I used the material aqua-resin to sculpt and apply a pearlescent waterproof finish that had a morphed but smooth texture so that the forms were organic and irregular. These forms were fitted with plants that had been transitioned from soil existence to hydroponic as well as all the pumps, drip valves, felt, and water tanks that would feed the sculpture. Due to installation constraints (a system of suspending artwork from cables along a thin metal bracket), the work could not be mounted to the wall therefore during installation a frame/shelf that would hold the units was designed. Another piece was the *Plant Signaling Archive Object 34.56.* consisting of hundreds of 1" spheres, 6" wood extensions, surface mounted LEDSs wired to a micro-controller with conductive thread, and twenty air plants. As a simulation the model displayed electric signals that were pulsing between the plants as the LEDs blinked in non-sequential patterns. Four 2x2' light boxes displayed microscopy of pollen, salt, leaf, and water from a phase microscope. The last part was the commissioning of one hundred plant tissue cultures by Cristie Lovat, a PhD student from the Plant Science Department at McGill University. Cristie propagated potato plant clones into the plant tissue boxes and these were to be exhibited in front of a light box (the cultures were completed after the exhibition and therefore they were not exhibited until two years later in the form of plant tissue ghosts).

Extraterrestrial Vegetation

The airplant, Genus *Tillandsia*, gathers moisture and nutrients through trichomes — micro hair-like vascular projectiles on the surface of their leaves. The pores expand and open to breath at night, absorbing elements through their surfaces. The pores close during the day to conserve energy and water loss. *Tillandsia* are extraterrestrial plants, uprooted, rooted in air, soilless, without earth, of air, mobile, and akin to moist and hot climates. Their position in the sculpture *Plant Signalling Archive Object 34.56* was meant to allude to both an expanded molecular model used in science to visualize micro-relations between elements and a very lightweight computing device or intelligent network that was invisibly organizing sensory information in collaboration with the plant's chemical secretions.

How do they communicate if not through their roots touching in the soil? Chemical? How do they forge symbiotic relationships with other beings? Ungrounded. In natural habitats do they usually stay in one location or do they shift or move? Transport. Transplant.

The linkage I explored, between the plant and the idea of life, growth, and decay, in a fictional or imagined extraterrestrial site was not to be taken literally as “plants in outer place”. Although I referenced some techniques and aesthetics from space-station agricultural research through the use of modular containers, soilless gardening, telecommunications portals, and tissue culture, at the time I was interested in laboratory apparatus as an aesthetic or performative process. While developing these narrative, semi-speculative fictions regarding plants and humans, the focus was initially on the gesture of transplantation; what does this act mean in multiple contexts? What other acts or events does plant transplantation connect to? Transplanting plants to outer space is an exaggerated effort and I was exploring what this event meant through the artwork as a form of generative dialogue.

In each of the three iterations of the Extraterrestrial Botanist project a new sequence develops in the progression of the concept and in relation to a shift in my artistic ethico-aesthetics. In the 2014 version, *Enquête sur l'affaire du Botaniste Extraterrestriel*, the project

features an account of a female protagonist, a distant relative of the artist,²⁷ who had been stationed on a subterranean moon station in the 1970s. My role as a commissioned artist in the present was to try and recreate artifacts from this mission using the remaining documents and films that had been reclaimed. The “artist” was commissioned to simulate through artifact, a kind of inherent failure associated with the mission. As per the classic space-sci-fi narrative, there is often a gradual acknowledgment of an inherent deception within humanity outside of self that cannot be changed, therefore, the protagonist is defeated by default or self-inflicted paranoia. Following this is an awareness of the deception of *mind*, and the eventual psychological disintegration or breakdown.²⁸ In extraterrestrial sites the technology acts to separate living and synthetic elements physically like hydroponics, or plants as sensors within a framework of human-based technology or sensing devices demonstrated in microscopy, tissue culture of potato plants, and time through a stop motion video. The intention was to work out from a 1970s high tech-meets-hippy aesthetic, almost autobiographically, from what I remember growing up, where the idea of the human in outer-space, in an uninhabitable place was referencing closed systems and utopian bio-domes. What appeared as I was researching the project was the concept of extraterrestrial citizenship or colonization, and a portrayal of sexism in space travel and science through visual media. In many of the technology print ads from this time women are highly objectified with photos featuring a sexualized female model standing beside or sitting on top of the machine model. My version of space travel featured an unknown individual as a lone researcher possibly experiencing psychological alienation. This individual may or may not have considered her human nature and the world around her in a psychological drama of self in relation to an oppressive and harsh environment. In this case, the subjective narrative of the researcher is not developed only the material artifacts.

The next iteration in 2016, *The Extraterrestrial Botanist, phyto.portal*, attempted to provide a way to open to the psychological realm by no longer avoiding self but going into deep reflection through meditation and a more transient collection of material artifacts. This installation included designing a hexagonal plant-based meditation chamber for plant-human teleportation (6' diameter); two living Spirulina growth vessels acted as signaling portals for the

²⁷ The distant maternal relative is a re-occurring theme from earlier semi-fictional works such as *Re:Materfamilias* (2006) a performative photographic series on women, science and failed inventions

²⁸ Similar thematic in films like *Silent Running* (1972), *Moon* (2009), *Solaris* (1972)

teleportation chamber; a suspended multi-tiered hexagonal selenite harp; series of four two foot square light-boxes with microscopy transparencies and a collection of preserved “ghost-cultures” (the remains of plant tissue cultures); a painting (*The Mesh*, 2016, acrylic on paper, 48”x 50”) from a series that reference the formation of micro-universes. There were still traces of the previous 1970s apparatus within the installation in the tissue culture vitrine and the microscopy light boxes but this phase replaces the scientific with more molecular-celestial versions of techne. In *phyto.portal* the plants guide the human towards mind-based teleportation within a focused meditation chamber. The tissue culture featured are presented as the “ghosts”, the dried remains that connect to past, as well a decision to not reenact the procedure of tissue culturing. A set of slow growth Spirulina (ancient algae) indicator sculptures/plinths were positioned on each side of the *phyto.portal*. As the micro cyanobacteria grew in number, the glass carboy within the sculpture transformed from filled with clear water to a hint of growth in strands of algae, and finally to a vivid, glowing, luminescent green. These works alluded to an opening, the idea of another place, a spectral space of energy that is interconnected to intelligence within all of life.

VI: Vegetal Intelligence

In 2017, the work was titled *ET Botanist, Closer to Home*, and exhibited a series of vibratory-flower based musical instruments designed and built for in-tuning; instruments of minor dissonance, and a video installation.²⁹ Each subsequent iteration of this project moved through differing techniques or practices as a process of developing a response and letting the research inform artistic decisions as well as the kinds of stories that were shared. In *Closer to Home*, ideas were sampled from quantum physics, speculative science fiction, and ancient mythology through figures such as chimera, harp, and the labyrinth. Three artworks were developed: *NeVis*, *nevis*, *NEVIS*, a wormhole simulation as a video installation that takes the viewer into a disorienting plant immersion. *VI: Vegetal Intelligence*, a model based on quantum mind as a brain like fractal tree labyrinth made of 3D printed models, air plants, hand-blown

²⁹ A flower essence is a concept borrowed from the “Bach Flower Remedies” an alternative medicine that is a system of capturing a certain vibratory essence from a newly opened flower (upon sun rise) into a small vessel made of crystal containing distilled water. Each flower vibration has different qualities that have been explored in depth by practitioners of this system.

glass, and laser etched light plinths. The last piece, *Songs for the Chimera*, was an irregular polyhedron Marmaharp. A Marmaharp is an instrument for experimentation in body-tuning for blends of communication frequencies based on geometric shapes.³⁰ This work contributes to the early development of a suite of instruments for vibrational research in sound and live performance. All the supports and some parts of the sculptures are fabricated with CNC router, laser cutter and 3D printer. Much of the research and experimentation included combining traditional hand-made artisan techniques with more recent imaging and computer controlled technologies. For example a 3D designed, CNC fabricated carved form of a seven circuit labyrinth was made for growing a living textile by filling the form with soil and seeds forming a root tapestry.

The ET Botanist series concentrated on the fractal or material qualities that different life forms share, specifically plants and human cognitive functioning; visual cortex processes as a projected mesh, neural maps and root structures; wave forms and conch shells; tree rings and bones. The idea was to gain aesthetic insight from beings that evolve and change rapidly: plants and trees are incredibly adaptive, and among the longest living beings on Earth. For some cultures, plants are teachers and healers, and perceived to be responsive, intelligent and dynamic. These projects question how people become more with plants by living in ways that open them into a direct relationship with the diversity and intensity of life that surrounds all beings, together — in rural and urban situations.

Image, next page, *An Inquiry into the Case of the Extraterrestrial Botanist* (2013-14). Installation detail of hydroponic grow chamber. Following pages: Page 61, *ET Botanist: phyto-portal* (2016-17) Installation, Detail of ghost tissues. Page 62, *ET Botanist: Closer to Home* (2017) Installation. Page 63, *ET Botanist: Closer to Home* (2017) detail of growth patterns on shell and 3D print. Page 64, *Ghostplant*, Montreal (2017) remains of tissue culture. Page 65, *ET Botanist: phyto-portal, The Mesh, Acrylic on paper* (2017) Page 66, *ET Botanist: Closer to Home* (2017) detail of 3D printed skull, sedums and hand-blown glass (2017). Page 67. *ET Botanist: Closer to Home* (2017) detail of 3D fractal trees.

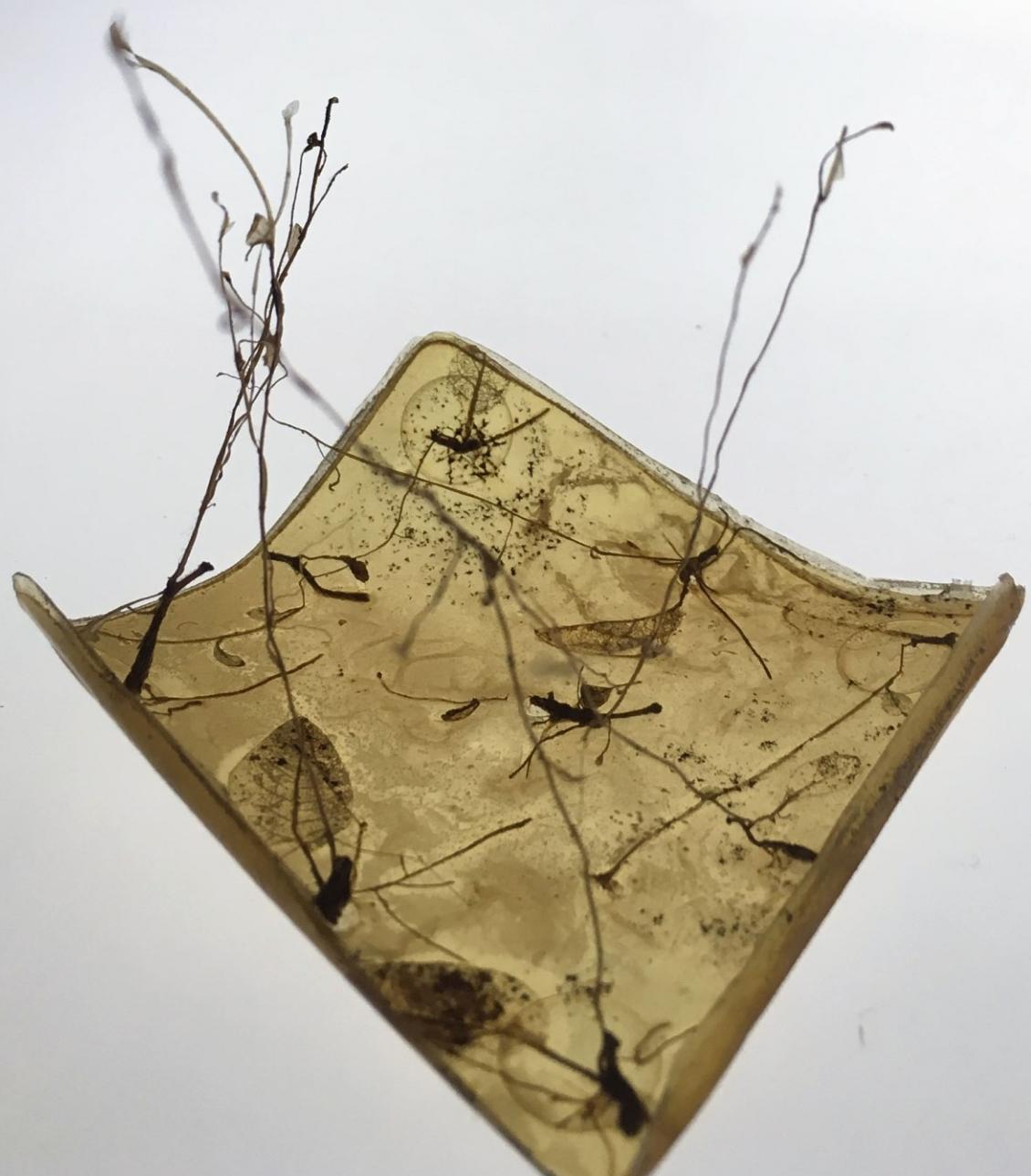
³⁰ The Marmaharp was not permitted in the show due to its size. I designed this horizontal harp-like instrument (first prototype 2017) with the base as a human-body sized soundboard. One person lays horizontally on the harp while others sit around the instrument and play the strings that rise vertically from the edges of the instrument. There are a number of sound holes that are located under the body's Marma points (sacred geometry applied to the body). Marma points are energy points in the body used for healing in Ayurveda.





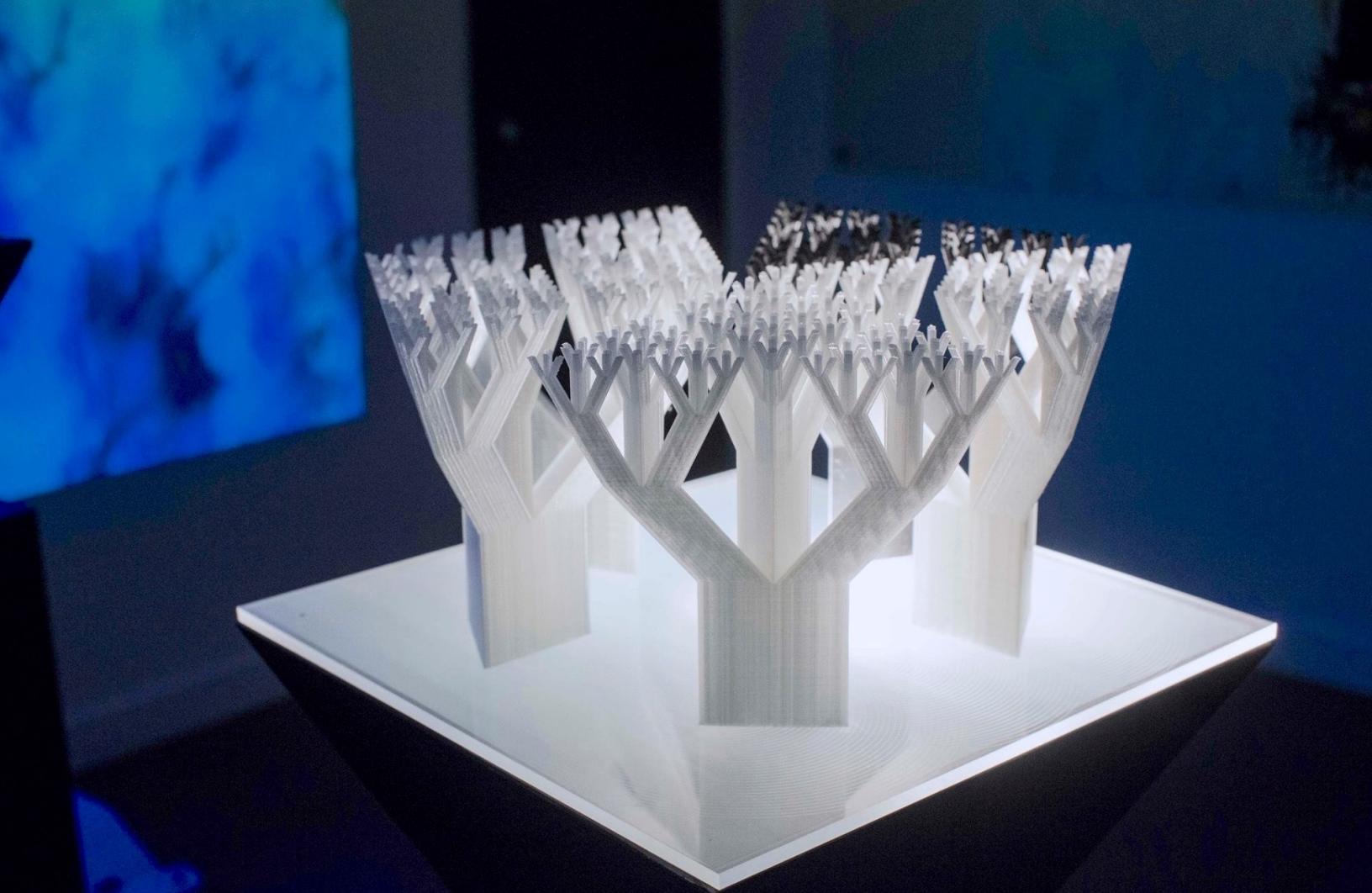


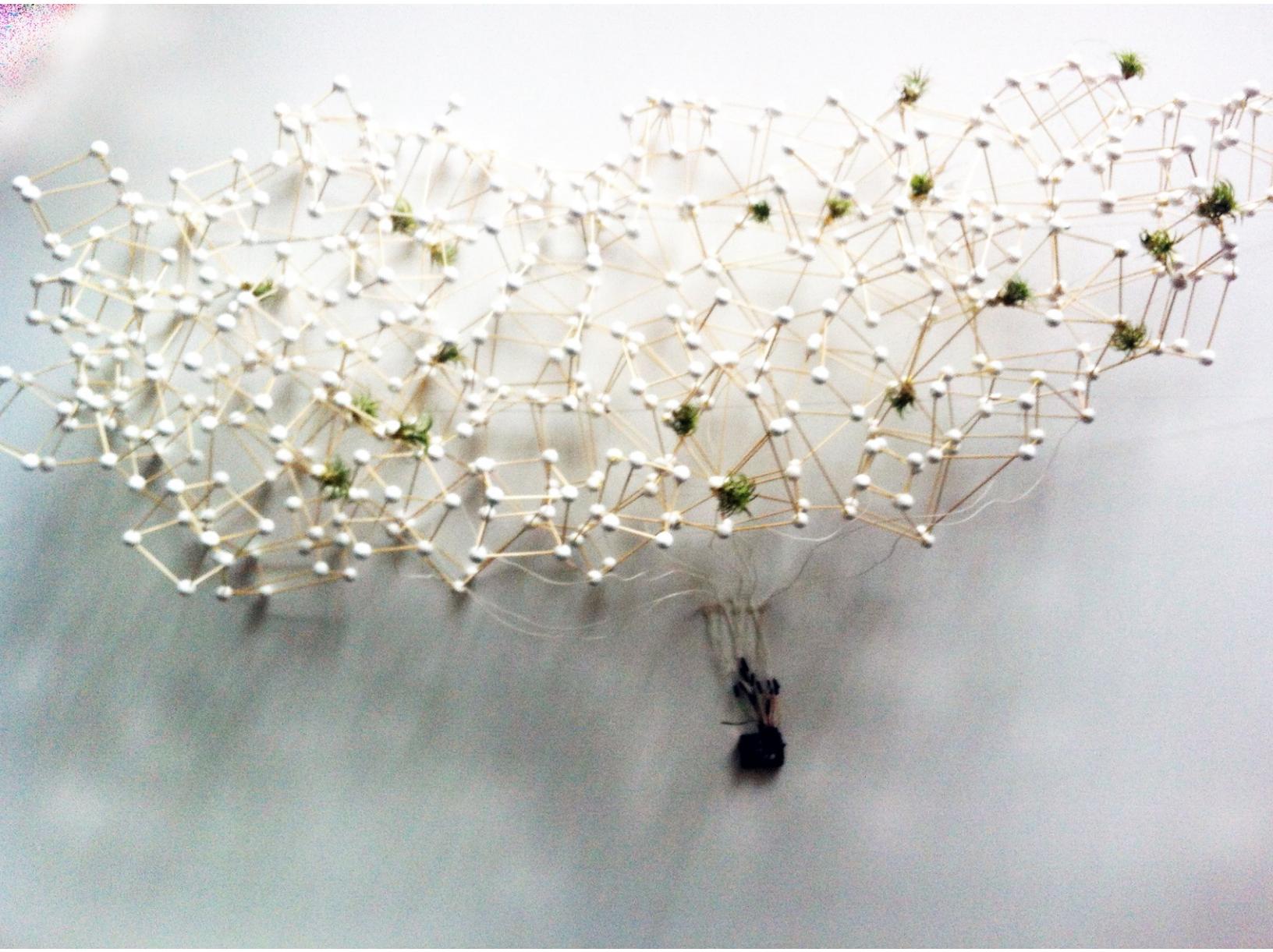












Image, this page, *An Inquiry into the Case of the Extraterrestrial Botanist* (2013-14) Installation detail of plant sensing module.
Image, next page, *The Bloom*, Montreal (2015) studio.



Intra-terrestrial (within earth)

What does the figuration of an extraterrestrial botanist connote? A human who tends, grows or cares for plants away from the Earth? A human who is estranged from plants and Earth and estranged from self? Someone who maintains a dualistic reality of phenomena? A disconnected and uncomfortable relationship to an urban environment? Initially it seemed that this project was simply a speculative fiction, a narrative of a research mission gone awry and the question: Why grow plants in space? The work also alluded to apocalypse narratives where figuring out how to survive in inhospitable environments is part of a collective cultural meme. *How to grow your own* was an initiative in the *Back to the Earth Movement* from the 1970s. Then in the early 80s, there was an implosion of new consumer technology with institutional mainframe systems, personal computers, and magnetic tape for recording and storage. Back to the Earth homesteading and the rapid adoption of computing technology developed simultaneously for many people in a Western context. In 1981, my family had one of the first personal computers in our home, a TRS-80 model III. One of the influences in this work was this integration of natural processes and digital technology as an awkward overlap or mixing. I incorporated paradoxical or even hypocritical material compositions such as the shiny pearl-finished hydroponic modules constructed from found curbside Styrofoam inserts for electronic equipment with a finish (Aqua Resin) that is marketed as a nontoxic resin for fiberglass. This work is auto-ethnographic and starts from a point where of contemplating why many people turned away from the knowledge of what was beneficial for environmental/human health in the 1970s and more or less embraced a lifestyle that made things so much worse for the next 30 years. Why did so many individuals seem to not acknowledge the effects of all the harmful effects of synthetic drugs, pesticides, petro-chemical byproducts, and extractive industries? Who didn't turn away or always acknowledged the long term effects these acts would have on different habitats and communities? What kind of concepts can help think with the notion of intra-connection between entities? Next, I discuss the radical assemblage as a unique term that emerged through artworks such as ET Botanist. I also reference two influential concepts that informed the radicle assemblage via the idea of living semiotics from Eduardo Kohn, and sympoietic relations from Donna Haraway.

the radicle

In botany, the radicle is the first part of the growing plant embryo to emerge from the seed during the process of germination. This word may also reference enacting the *radical* (identical pronunciation in the Latin: “of roots”), as in a radical politics comprising the various positions that sought to introduce change and collective intervention in a post 1968 reactionary environment. In *Time Travels: Feminism, Time, Power*, feminist theorist Elizabeth Grosz writes that constructivism, a movement initially preceding the revolutionary events of 1968, was “a reaction to prevailing naturalisms that regarded the division of labour, or the division of sexes or races, as somehow justified through some natural order of giveness,” thus viewing itself as, “the opposite, the other, the subordinated underside of naturalism, biologism, or essentialism” (Grosz 2005, 44–45). Grosz suggests that this position or divide was “necessary to constitute the basis of a radical politics” (45). The radicle is the initial expansion of the plant form from its most contracted position. Here, I allude to this nascent growth, this rather miraculous rupture as a point of departure—not as a radical politics or even as a metaphor, but more as a series of potentials for movement away from categorization or the possibility of homogenizing experience. By designing art works with this idea of the radicle assemblage, I wanted to shift into a messier zone of dynamic polarities that function through a spectrum of various attractions and expulsions. Grosz’s describes the radical as a movement in that:

Radicality itself seemed inherently constructivist, for what point was there in rebelling against nature, resisting what was inevitable? Culture was rendered equivalent to changing, historical, the unpredictable while nature came to be understood as fixed, unchanging, limited in advance in being governed by invariable, universal, and predictable laws. Nature became the background against which the cultural elaborates itself, the contrast that distinguished variation, difference, becoming from the given, the unchanging, and the inevitable. (45)

Now, in acknowledgement of anthropogenic ecological havoc, ongoing colonial projects of domination/exploitation and resource extraction, the modern paradigm of nature/culture is increasingly being called out and challenged. There is a need to identify and dissolve particular notions of *being* or what was a given in terms of Western systems of control and domination. We must question all of the assumptions about how things have “come to be” in the past few hundred years. *Things* that have *come to be* over the period of rapid imperial conquest and

industrialization need to be repositioned with concepts that acknowledge strategies of multi-species becomings, decolonial thought and acts, and multi-perspective, empathetic comprehension. The task of beginning to form an aesthetic politics that considers multi-species players as an integral part of an earthbound collective became my *radical* project. Grosz's proposition at the conclusion of her text is provocative and serves as one of many entry points for thinking with phenomena and performative aesthetics: "What would the study of culture, cultural studies, look like if nature was regarded as a framework and provocation of culture rather than its retardation?" (52).

I began the doctorate with an interest in experimental botany developed alongside different apparatuses for sensing and learning about unique characteristics or behaviours of different plants. For example, research on the sensitivity of plant life commenced in the nineteenth century with the work of Sir Jagadish Chandra Bose (in various publications on plant sensitivity, 1902–28) and Charles Darwin (*The Power of Movement in Plants*, 1880). Some initial aesthetic projects (such as *Disco for Darwin*, 2010; see Appendix) were designed as interpretations of some of these early experimental concepts where I used technological apparatus such as surface-mounted LEDs, time-lapse video, conductive thread, micro-controllers with electronic sensors, and software applications to map and sense movement. I experimented with plant tissue culture techniques, fungi spore printing, propagation, hydroponics, and automated growing environments. After the first few years of thinking-doing with technology and plants in these frameworks, a shift occurred in which I increasingly felt that these activities were not aligned with potential ethico-kinship practices or in cultivating relations with concern or care within radicle assemblages. Some components of these projects didn't feel aligned with what I felt that ecological thinking could embrace or become and I was increasingly uncomfortable when exhibiting them. Donna Haraway writes on the necessity to contribute in ways that are deeply invested in possible relations with and through specific acts:

It matters what matters we use to think other matters with; it matters what stories we tell other stories with; it matters what knots knot knots, what thoughts think thoughts, what descriptions describe descriptions, what ties tie ties. It matters what stories make worlds, what worlds make stories. (Haraway 2016, 12)

Learning with discomfort or even vulnerability was an integral part of various projects of mine, and this involved gradual shifts to evolve through thinking-making-knowing in aesthetic

dialogue and *within* relations among different beings. In this overlapping of thinking-with multi-species encounters, ideas became things, things that mattered in differing ways. And, as I continually discovered, and following Haraway, learning through subsequent iterations or material versions of a concept exposes how matter always matters and ways of knowing matter differently.

Living Semiotics

The transition between different iterations of a project's conceptual locations involved thinking through what the terms of an aesthetic approach signified when in relation with different phenomena. When an artwork (or radicle assemblage) was exhibited and captured in a particular location, this event became a non-relation as the assemblage was now framed within a particular narrative/space/duration/audience. In this way, non-relation referred to a minor negation, such as in a binary decision the "0" or "1," on or off, yes or no, live or not-live, sustains limited possibilities and instrumentalized readings and assumptions about phenomena. For example, a digital or analogue sensor cannot quite unfold into the unknowable, an indefinability, or a feeling that is part of a forming self in diverse relations with living semiotic signs or among spectrums of existence. For an electronic sensor to be contextual in an expression, it must be acknowledged that it is connected to *living signs*, that it is a semiotic configuration that involves complex relations grounded in knowledge and bodies through material and discursive practices.

A living sign is a prediction of what Charles Sanders Pierce (1839–1914) calls a *habit*. As anthropologist Eduardo Kohn explains in *How Forests Think*, a living sign is an expectation of regularity, something that has not yet come to exist, but will likely come to be (Kohn 2013, 76), then to expand or multiply many living signs, since, "a lineage of signs can potentially expand into the future as an emergent habit, insofar as each instantiation will interpret the previous one in a way that can, in turn, be interpreted by a future one" (Kohn, 77). The design of technological devices, or artworks that act to control or define a set decision in binary configurations rather than expand perceptual capacity limits the possibilities for emergent interactions—that is, if one experiences an inability or unwillingness to sense and understand different living phenomena beyond basic sensory stimuli such as visual, auditory, or touch. The sensory capacity of beings continually shifts and fluctuates, as all life is in movement.

Technologies and concepts that move beyond binaries can include dynamic occurrences providing a wider spectrum of creative interpretations and actions. Individuals can begin to open to and to understand multi-species beings by forming worldly encounters through semiotic gestures while embracing the existence of chimerical fluidities among or within living and matter-based phenomena. A simple example of this would be spending more time listening and sensing as simple immersions in complex multi-species environments such as forests. What kinds of technologies could be intertwined in the development of perceiving different living signs? This may involve the incorporation of new forms of notation (with sound and vibration, or chemical sensing in pheromones) that move beyond human language into other forms of semiosis. Kohn describes the living semiotics as connecting “any entity that stands as a locus of about-ness, within a lineage of such loci that can potentially extend into the future, can be said to be alive. The origins of life—any kind of life, anywhere in the universe—also necessarily marks the origins of semiosis and of self” (77). As an example of expanding semiotic comprehension in terms of aesthetic practices, I access technologies as sensory prosthetics to connect or guide attention to different life forms. This idea started to form through the project *Urban Habitat Laboratory* (UHL, 2006–09), which I performed at M:ST Performance Art Festival in Calgary, Alberta. UHL was a quad bicycle converted into a multifunctional off-grid micro-centre for performing eco-urban actions. One improvised performance that emerged through an engagement with visitors was wrapping a piezo (contact) microphone to a tree with an oversize tensor bandage so passers-by could listen on headphones to the sounds emanating from the tree’s trunk and roots. This simple gesture and the variable, unrecognizable static droning sounds that were generated, created multiple imaginative narratives about the tree. The tree was transformed into a giant sensor, a subterranean speaker, an amplifier of this region of the earth, and a silent but sensory-rich being. It was further speculated by participants that each tree would have a unique sound based on its location and the surrounding infrastructure. These varied hypotheses generated a great deal of conversation. People would comment on how they never really noticed trees or plants in the city before. As one listener remarked: “This is quite strange to be standing here listening to a tree. I don’t really think about all these trees and bushes. I didn’t even notice them and I walk by here every day to go to work.” Perception and attention can be tuned, can shift, and can be aligned to meet with new experiences that are deemed interesting and significant. Technological apparatuses already employ an elevated position as being scientific

and objective. I position this assumption slightly askew, subverting it and performing more esoteric and speculative encounters. Generating unusual or unexpected activities with or about diverse vegetal beings draws different attention to plant life and to relations between people and plants, as well as people and places. This strategy presents aspects of multi-species beings in ways that can be interwoven into everyday habits and habitats, subtly applying a shift in preconceived conception (or non-perception) of such beings. It also relies on fostering relations that are not totally based in paternalistic, colonial formations of control and domination, but rather, as mutually beneficial relations that encourage curiosity and engagement.

Sympoietic

My efforts in fostering relations with different beings within radicle assemblages were *initially* a slow transition to dimensions not readable or enlivened via the exclusive use of electronic sensors. I wanted to express how life forms are intrinsically semiotic, whereas Kohn explains that Pierce’s “scientific intelligence” means “capable of learning by experience,” so that selves learn by experience, selves can grow, and selves continue to think in new ways by learning new habits (Kohn 2013, 78). The aesthetic experiments that I composed for the different projects during the doctorate studies played with processes. The projects invented forms of living semiotics through material-semiotic configurations, and performed through material-discursive knowledge making. These works also expressed themes of failure, alienation, decomposition, leakage, chimeras and clones, along with quirky parodies of closed-door, exclusive laboratory research as part of performative processes. A few examples include creating a disorganized plant tissue archive collaboratively with gallery visitors in *Plants & People* (2011, Appendix); situating fictional government space-research apparatuses in public spaces in *The Extraterrestrial Botanist* (2014–17); and assemblages that blend laboratory, construction, and artistic materials and aesthetic approaches in *Automata for Colour* (2010–14), *The Temporary Archive of Ambiguous Architecture* (2012–15), and *Animated Landscapes* (2010–11).

Early works included designing propositions that incorporated autopoietic design (self-creating and maintaining system) in experiments within greenhouse, gallery, or vitrine environments and used time-lapse video of growth or movement-tracking correlating to sensor input. Projects staged in art galleries created precarious installations, such as the numerous

synthetic sloughs with living plants sustained by artificial light and nutrients in *Automata for Colour I–III*. I also frequently worked in site-specific fieldwork in various symbiotic—or, as Haraway expresses it, “sympoietic”—places, making-with unfamiliar beings that connect distributed and nonlocal activities: mycelium, cyanobacteria, gastropods, lichen—complex, chimeric creatures (myself included, see Appendix, *The Committeee* (2013), *In Search of the QR_ebra Plant* (2013), *Seeking Chimera* (2016) *The Sandstone* (2018)).

In *Staying with the Trouble*, Haraway offers the term “sympoietic” as a concept that moves beyond autopoiesis, as the latter is draped in the history of cybernetics and information models that offer deterministic, spherical, and teleological concepts of interaction within systems (Haraway 2017, 32). Haraway shares M. Beth Dempster’s definition of symposiesis as “collectively-producing systems that do not have self-defined spatial or temporal boundaries. Information and control are distributed among components. The systems are evolutionary and have the potential for surprising change” (Dempster quoted in Haraway 2017, 32). I recall being directed to the concept of autopoiesis (*Automata for Colour* was influenced by this concept) when working on early projects, and, in reading about these ideas, acknowledging that some components were of interest but others were not. Autopoeisis didn’t quite gel due to its closed-system emphasis. As I learned through multiple installations, the notion of a structural or material boundary is quite unrealistic, as even within a set installation many elements would, and did, come into and out of an installation location, creating visible evolutions and spontaneous change.

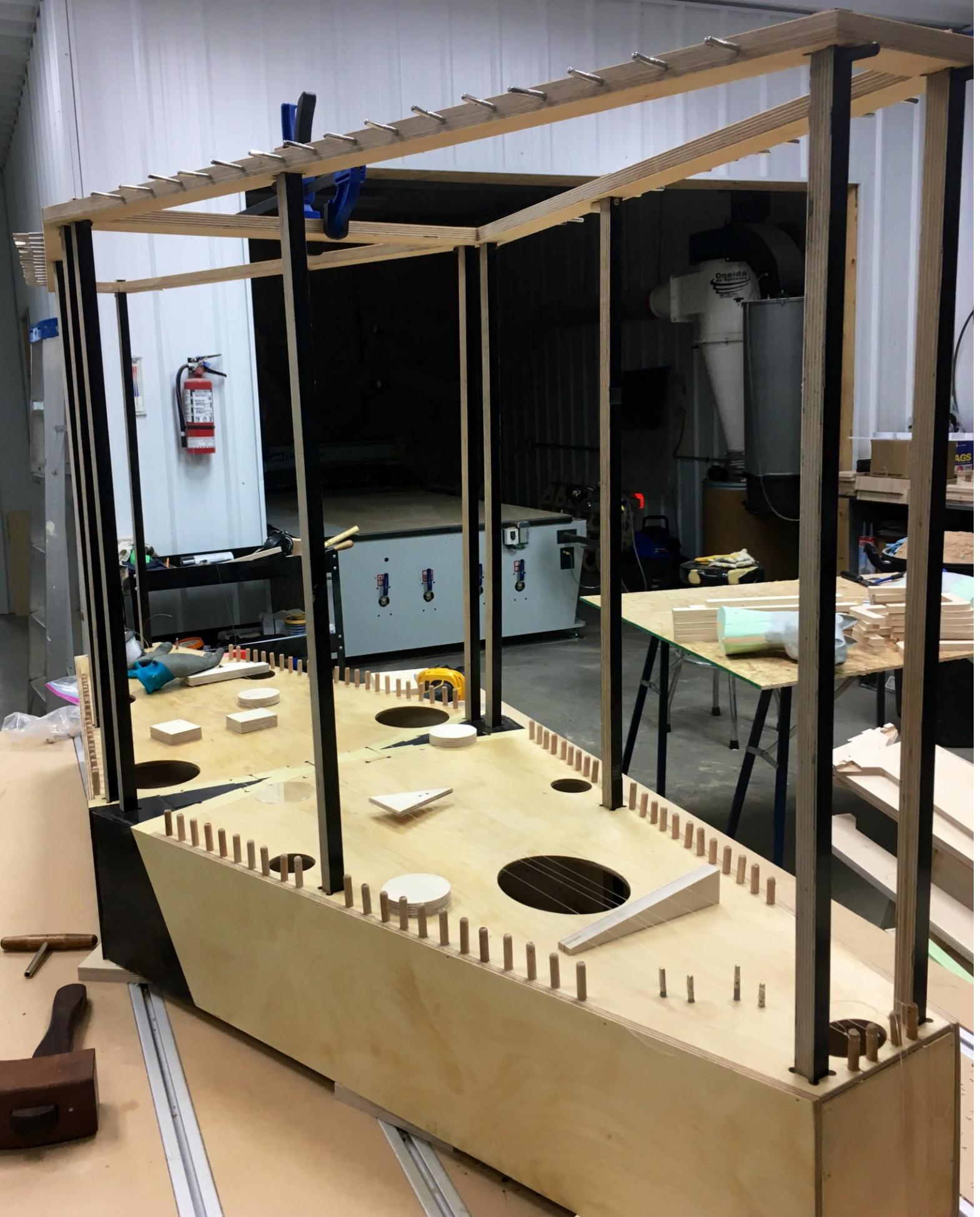
A sympoietic approach is about developing an ontology of being-with different creatures, thus expanding from representational and determined processes toward *agential practices*, a term sampled from feminist theorist Karen Barad’s work on agential realism. Agential realism is a theory infused with thinking from quantum physics and posthumanist feminist concepts, wherein phenomena do not preexist but come into being through their intra-actions. All entities are therefore composed with agency and in a permanent state of flux. My research projects encompassed aspects of beginning to learn to think, to actively respond with subtle sensory-based semiotics and sympoietic design through extending concern or care among different actants. In a blog focused on anthropologist and sociologist Bruno Latour’s work, the term *actant* is used to stress that material causes as well as human actors may be determinants of social

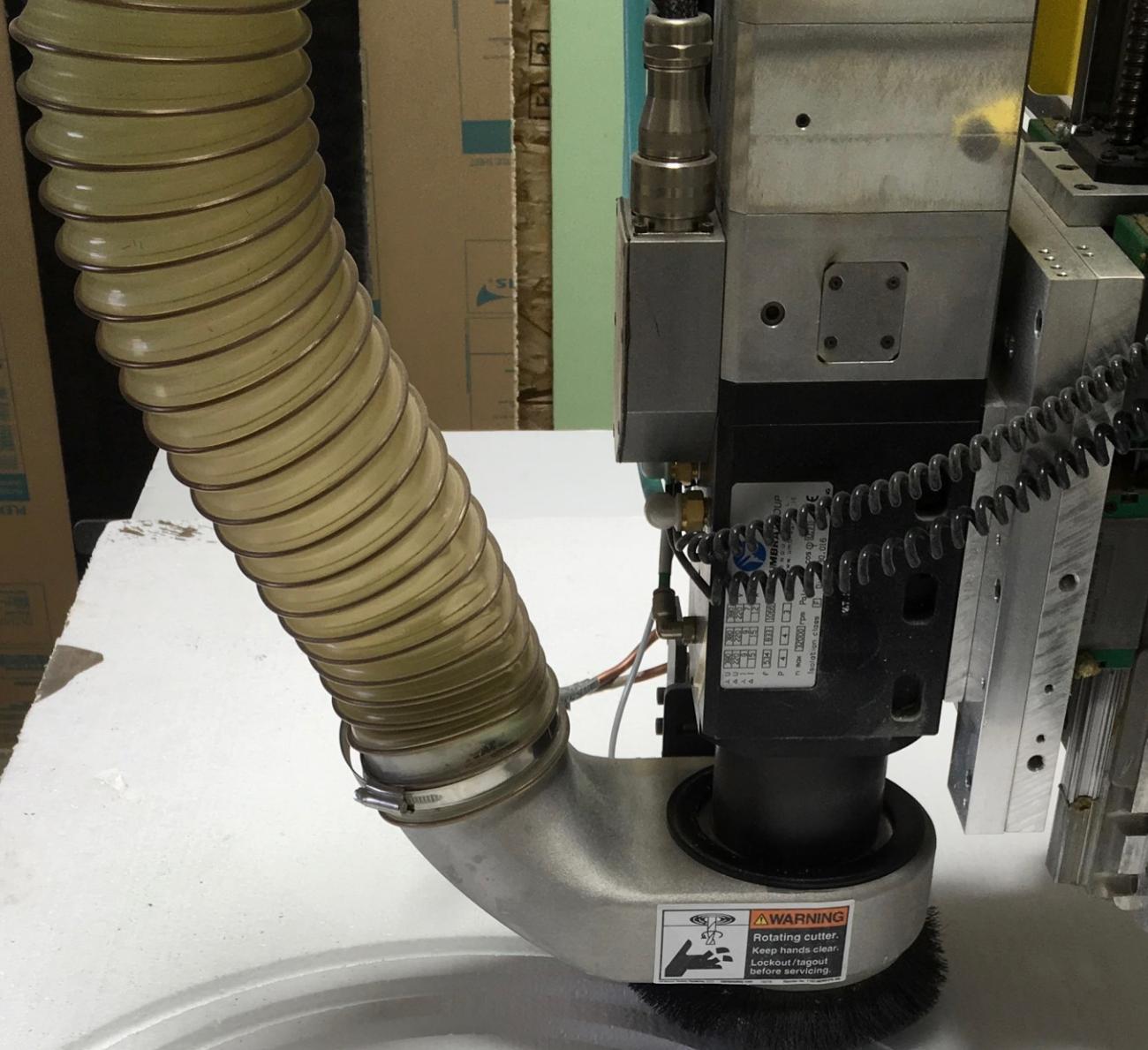
interactions and outcomes.³² One of the elements of my research was to explore an imagined separation held between humans and different beings. I brought diverse beings closer to human through performative activities and different or unusual configurations that lured participants away from habits and into their own, unique form of engagement. In an interview for *New Materialisms*, Karen Barad argues for a theory of relational ontology that avoids using the term *agent*, or even *actant*, as a way to “displace the very notion of independently existing individuals” (Barad, Dolphijn, and Van der Tuin 2012, 54). Barad states, “The notion that there are agents who have agency, or who grant agency, say, to non-humans, pulls us back into the same old humanist orbits over and over again. And it is not easy to resist the gravitational force of humanism, especially when it comes to the question of agency” (54). Agency, for Barad, is not something that someone or something has, but is “an enactment, a matter of possibilities for reconfiguring entanglements. So agency is not about choice in any liberal humanist sense; rather, it is about the possibilities and accountability entailed in reconfiguring material-discursive apparatuses of bodily production, including the boundary articulations and exclusions that are marked by those practices” (55). In her article “Posthuman Performativity,” Barad outlines her theory of Agential Realism as an account of the materialization of both human and nonhuman bodies through material discursive practices. Material discursive practices demand an understanding, at once, of material phenomena, matter’s historicity, and practices that simultaneously acknowledge forms of human and more-than-human agency. As I deepened my understanding of concepts such as Barad’s agential realism or Kohn’s living semiotics, artworks took on different forms and I was motivated to develop aesthetic experiments that embraced the complexity of overlapping existences. One of the methods that I explored in depth was generative or emergent installations where assemblages were set up to perform or enact over the course of an exhibition period. The effects or residues of such performances or performative installations were then what was considered the “artwork” rather than the initial objects or entities that were collected together. In the next chapter I discuss how this concept of generative installations (radicle assemblages) emerged through two studio projects.

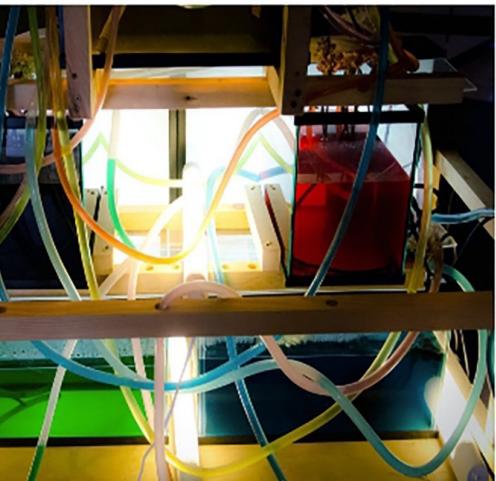
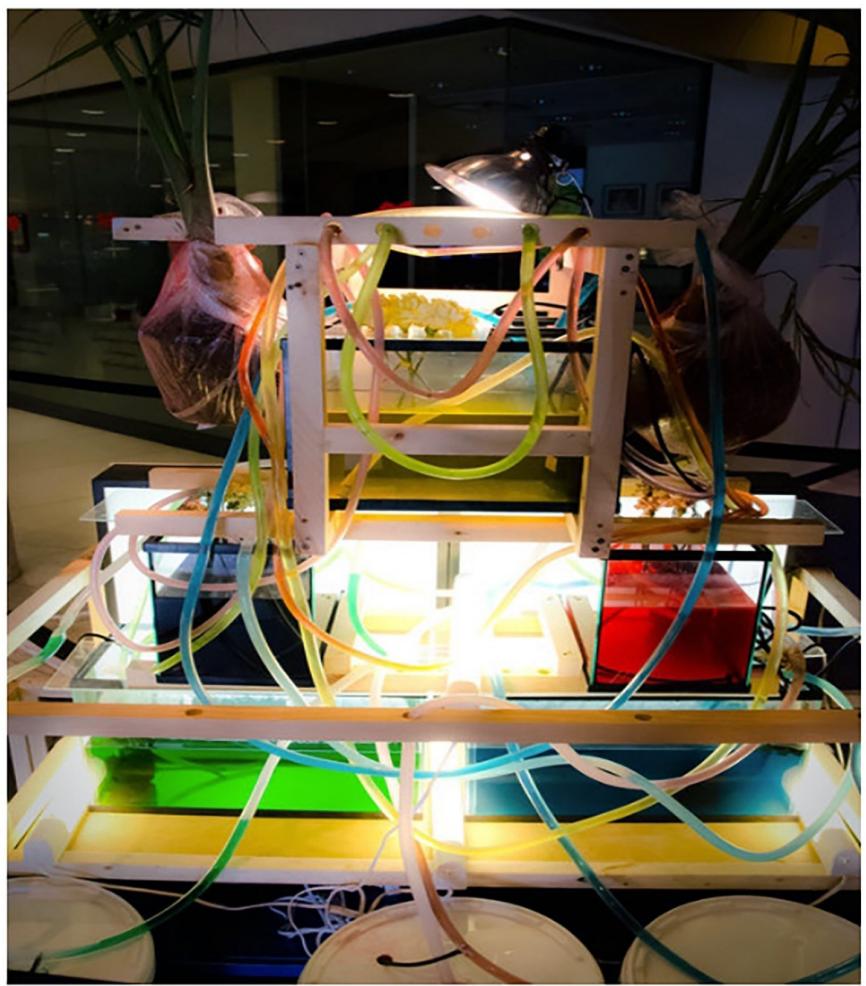
³² <http://latourbugblog.blogspot.ca/2009/01/actor-network-theory-terms-and-concepts.html>.



Image, this page, *ET Botanist: Closer to Home* (2017) detail of root tapestry mold, studio. Next page, *ET Botanist: Closer to Home* (2017) detail of Marma Harp, prototype in studio, Nevis. Page 80. *ET Botanist: Closer to Home* (2017), CNC cuts mold for root tapestry in studio, Nevis.







Image, this page, *Automata for Colour III* (2014). ArtSouterrain, Montreal.

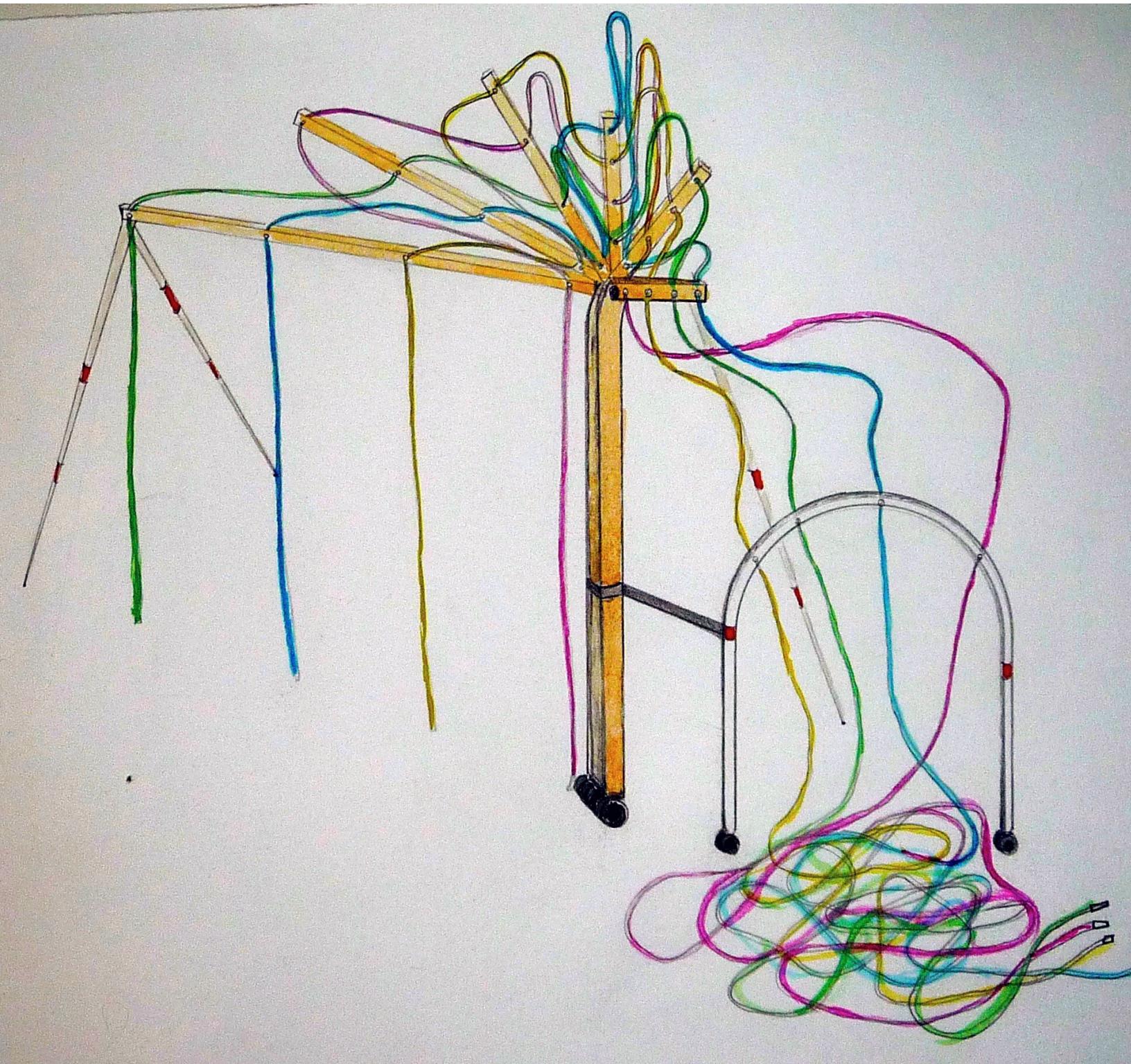
Image, next page, *My Perfect Life Keeps Leaking into Your Perfect Life*, Schoppingen (2010) Act I-III







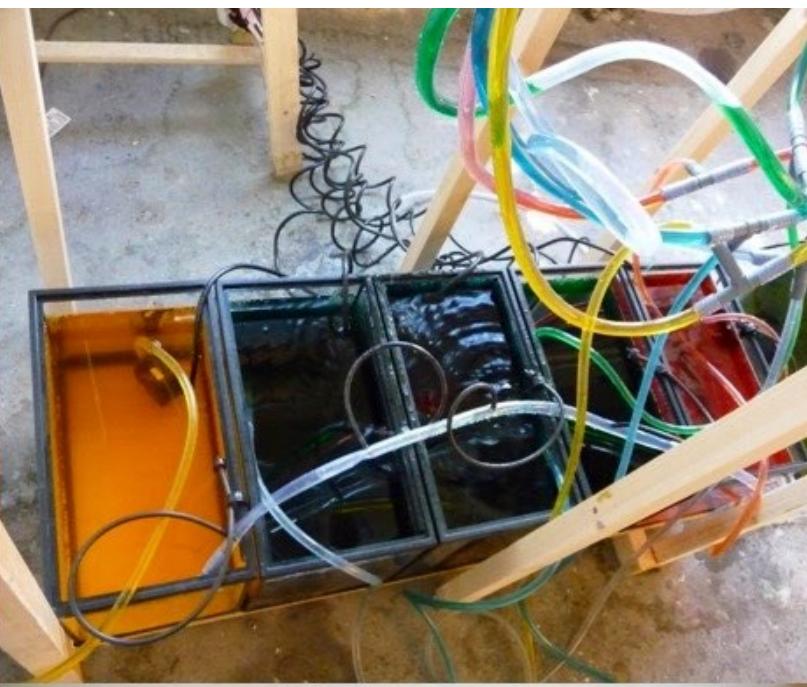
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Image, previous page, *Automata for Colour* (2010). Drawing and ink on paper.

Image, this page, *Colour Theory for Carnations* (2011) Studio, Montreal.





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Image, this page, *Automata for Colour II* (2013) Saint Jean Sur-Richelieu.



Automata For Colour II

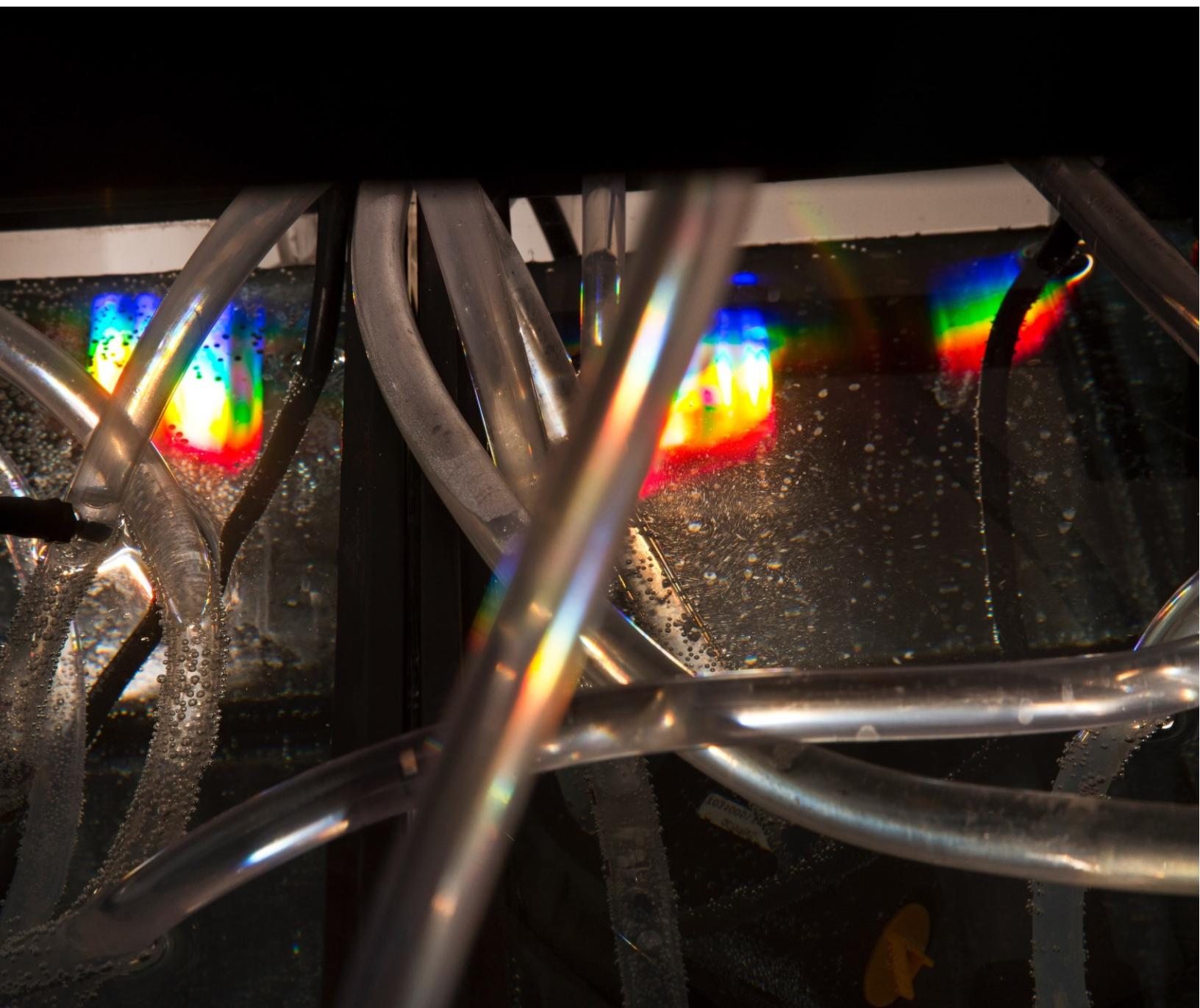
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Image, previous page, *Automata for Colour II* (2012) Whippersnapper, Toronto.
Image, this page, *Automata for Colour II* (2013) Saint Jean Sur-Richeleau.



Image, this page, *Automata for Colour II, detail* (2012) Whippersnapper, Toronto.
Image, next page, *Automata for Colour II, detail* (2013) Saint Jean Sur-Richeleau.





Image, this page, next page, *Automata for Colour II, detail* (2012)Whippersnapper, Toronto.





Image, this page, *next page*, *Automata for Colour II, detail* (2013) Saint Jean Sur-Richeleau.



more-than

In “The Art of Failure,” a review of the installation *Automata for Colour* (2012) at Whippersnapper, a Toronto micro-gallery, art critic R. M. Vaughan writes:

I’m convinced the installation is ultimately about failure; or, to be more precise, about elaborate exertions made in pursuit of relatively pointless goals, about exploring systems and processes for the sake of the exploration, not any achievable result. Which explains all the dripping, sopping water; that plink-plink sound, lovely and soothing as it may be, is also very much the sound of resignation, of damp reality (Vaughan 2012, *Globe and Mail*, Art Reviews).

When *Automata for Colour* was conceptualized and materialized (2010-2014), it was to be an expression, a natureculture experiment as the inevitable overlaps between matter, techné and differently composing ecologies. The work was intended to incite both an aesthetic reading of excess in chemical, genetic manipulation, and synthetic materials along with an acknowledgement of how human tampering with habitats and living creatures is visible and comprehensible yet often ignored in the pursuit of new technological gizmos and consumer products. Vaughan’s critique was an insightful reading. In this chapter, I relay the transition that accompanied my research-creation practice from a location of working amidst a feeling of “despair, damp resignation” in regards to natureculture assemblages to developing methods that explore unique performative qualities of phenomena. In this section I describe how materials, narrative, and creatures were entangled and led to the co-creation of artworks through: *Automata for Colour*, (2010-2014) and *The Temporary Archive of Ambiguous Objects*, (2012-2015).

Performing With Research-Creation

Cultural theorist Maria Puig de la Bellacusa writes in *Matters of Care* that, “personal practice and ‘private’ forms of living are connected to a collective in an intrinsic way and that it is *ethos* that grounds ethical principles rather than follows them.” (Puig de la Bellacusa 2017, 127). Caring for an immediate environment is a care that can be dispersed into a larger *world*. I learned forms of empathy with domestic natures as I continually worked with the concepts of naturecultures and radicle assemblages through studio work and exhibitions. My identities

morphed through the projects in response to an assortment of experiences and entanglements such as becoming a telematic researcher (*Plants and People*, 2011, *Search for QR_ebra Plant*, 2013, *The Committee*, 2013), or a lone botanist exiled in subterranean, lunar space (*The Extraterrestrial Botanist*, 2014–). Sometimes this identity was as a plant whisperer, “she listens to trees,” or a witchy vibrationist tuning into earth and phenomena through geometric harmonies articulated through lines, frequencies, and expanded, polygonal harps (*The Ancestry of Objects*, 2013–, *In Search of Chimera*, 2015–). Each of these emergent identities troubled stable categories as they each contributed subtle subversions through minor strangeness when playing and creating narratives that unraveled as the work and research developed. This was a performative method that provided a deeper connection to material, to diverse existences, and to different crews of multi-species players that were part of domestic environments. The persona’s formed intricate components within the entire apparatus of the material research and production as they assisted with the conceptual texts, or were present in videos as a voiceover, a hand, or a shoulder. They (or I) were rarely or minimally glimpsed as a dominant presence within the publicly exhibited works. This was a strategy to make space for an audience to continue the narrative within their own acts or thoughts-forming without my direct intervention.

The aesthetic and performative part of the art works were connected to an identity in flux. A self is unruly, spiraling around, dispersed among many forms and articulations. A self is inside and outside different systems and processes, weaving and unravelling simultaneously. The characters that I became a part of rejected many of the assumptions placed on them as they traversed and explored their own frames of being. Rather than botanist as an agent of empire, my characters performed interventions within experimental botany. They explored and played with the authority of laboratory sciences through creating speculative fictions to act within. The persona’s hybridized further when relocated from intimate domestic spaces or the privacy of a studio — when released into the public sphere, and when subject to open contemplation. There was a tension when re-situating a performative practice into a public place as it is much more intense because people and their unique interactions change the work in unpredictable ways. In the studio, as the liminal location between concept and public exhibition, I played with the stories as they evolved. Then, in the public space, I guided others through the stories to share in what ideas could become. The notion of an identity in regards to a specific narrative matters differently when a self begins to dissolve into the flow and forces of phenomena in an

interconnected and relational placement. I responded with different people when they encountered the art work and this also changed the potential of the concept depending on varied interactions. As the work required constant tending I was often in the exhibition spaces and could interact with visitors. The art works were flexible and adapted minutely to each person who decided to act with or co-play while also continuing.

Autopoietic, self making man came down once again, this time in tragic system failure, turning biodiverse ecosystems into flipped-out deserts of slimy mats and stinging jellyfish. (Haraway, 2016, 47)

Let Be: Ecological Art

In *The Ecological Thought*, theorist Timothy Morton outlines three approaches by which he defines ecological art. First, is the kind of art that sets up evolutionary processes through automation as in early process art, such as Hans Haacke's *Condensation Cube* (1963-65), a hermetically sealed, clear acrylic plexi-glass box that holds about one centimetre of "condensation" — the element that most galleries, at this time, took careful measures to protect against (moisture engineering in the white cube).³³ The second approach works with consciousness to reveal truths or events to foreshadow what different actions may eventually result in, or have already; like artist Edward Burtynsky's photographs of wastelands or material excess resulting from industrial capitalistic production. The last type is the modelling of a so called "nature" through mathematics and science, such as special effects in cinema, time-lapse photography, or fractal geometry. In Morton's three categories, there is a parallel between the progression of my research over several years of experimentation, beginning with systems approaches (*Automata for Colour*, 2010), to speculative narratives of bioengineering (*In Search of the QR_ebra Plant*, 2013), and later the mathematic/fractal notions of vibrational and emergent performative networks (*ET Botanist: Closer to Home*, 2017). Morton's overall message is that ecological art must explore materiality, and this investigation can occur through any medium—such as painting, sound art, installation, literature, or film—any approach that allows the material to "let be," in a sense, or to be what it is. Morton writes that, "the ecological

³³ See the article Haake's Condensation Cube by Mark Jarzombek, MIT Papers:
<http://web.mit.edu/mmj4/www/downloads/papers.pdf>

thought demonstrates that the aesthetic dimension is full of emptiness—gaps and openness—rather than being a solid, plastic thing. It has no authority” (Morton, 2010, 105). Building on this idea, Morton suggests that like a modernist notion of nature, artists are moving toward an “un-working” of aesthetic concepts, naming practices, or ideals held over from the practice of modern art, wherein the work of art is considered precious. In this line of thinking, contemporary environmental art “is like an aura without an object,” opposed to the idea of Walter Benjamin’s art aura that cannot be expressed or is lost through mechanical reproduction (Morton, 105). In Benjamin’s time, when considering the presence of something living, such as a plant, within an artwork, one can hypothetically ask: If an entity is not a representation of itself, can it even exist as a work of art? As performance art from the 1970s struggled with the placement of the body in the artwork and what this meant in terms of representation, the gaze, and subjectivity, my work turns toward questions of how a living being has come to be aligned in a relationship, is performing, or is responding within an artistic proposition.

In a gallery exhibition, most likely, a plant did not place itself within such an arrangement. Transplantation accentuates concepts relating to agency where living beings become agentic entities. Benjamin cautioned us on the actuality of reproductions when he wrote, “One might subsume the eliminated element in the term ‘aura’ and go on to say: that which withers in the age of mechanical reproduction is the aura of the work of art” (Benjamin 1936). Can Benjamin’s heading be repurposed in terms of a living reproductive process such as tissue culturing (cloning or the *cellular reproduction* of living vegetal tissues)? For Benjamin an aura is an artworks presence in time and space, its unique existence at the place where it happens to be. An aura is a feeling, a sense of liveliness and expression. Could an aura be generated or grafted onto a digital or mechanical reproduction through its placement in different relational situations in the *world* over time? The technique for culturing the tissues of plants was perfected during the same decade Benjamin wrote his iconic essay. However, unlike mechanical or digital reproduction, the status of the original in the process of cloning a living being becomes a moot point—or does it?

Artist Natalie Jeremijenko’s project *OneTrees* (2000), demonstrates that the biological makeup of phenomena is only one aspect in a complex network that consists of social relations, geography, microclimates, technological interventions, and many other factors. Jeremijenko cultured one thousand Paradox Walnut trees as clones and then planted them in varied socio-

economically neighbourhoods in California. Years later, the trees were radically different from one another in size, health, and shape, depending on their local conditions and varied interactions with members of the community. In terms of an artistic practice, what are the ethical implications of genetic manipulation and/or physical alterations that may surface? As Morton writes, ecological art is all aura and no object which means a focus on relations and materiality that exist in the world. In this sense we begin to focus more on the sustained acts in artistic material relations. Also, conceptualizing an expanded time-sense or duration that moves beyond human is enlivened as living beings, such as trees, inhabit very different existences.

Ecological art takes account of relationships and centers aspects that are important to reflect upon in terms of being human in this moment. Projects that explore human relations with their environments can suggest possible ways for being that may not be part of habitual behavior. Suggestive modes of the experiential are interventions that open into reflection on one's habits and ways of living. Next, I discuss two bodies of work that incorporated thinking with multi-species and material agency as performative narratives towards an understanding of the complexity of a concept such as ecology.

Studio Project I: *Automata for Colour* (2010)

{...[Primary colours must become secondary.

A document runs in a pattern of one colour a day or what consists of sun-up-moon-down.

Colour is systematically removed from the system through transpiration into secondary storage. Traces of previous data become absorbed into the document.

Water is a conduit.

Residue is a memory.

Data is colour.

Cells act out as strange storage.

The document reveals a residue of data as it performs through the system. External variables can be defined as the following:

Duration, lapse, cyclical events, reabsorption.

The document can be refreshed every week but this is not a rule.

Duration is expressed as a series of leakages.

Leakage is some kind of hope, not entirely unproblematic. Something towards a poetic event after-time. The system will reveal an inevitable compounding effect. This is unavoidable. This could be described as noise, but, really it is just a decline into shades.

Shades are the mature state of this system: An evolution of sorts?

This behaviour is not predefined, although, it is expected.

If the artist was a plumber, the system would be nearly perfect.

If perfection could be defined as something that has a sense of autonomy — or is self-restorative, or self healing, or self governing?

If I was an engineer of aqueducts this statement would be more interesting or ridiculous. It may not exist.

Transmission occurs when the petals are expressed as a chromatic screen; reabsorbed then reflected in dual surface illusions cycling through perpetual nowness...]

—Artist Statement, *Automata for Colour*, 2010.

Automata for Colour (2010-2014) was an installation as a series of acts in leakage, transmission, and flow suggesting interludes among entities as an ongoing exchange of potentials. Five iterations of the installation were created: *My Perfect Life Keeps Leaking into Your Perfect Life* (2010), residency, Kunstlerdorf Schöppingen; *Colour Theory for Carnations* (2011), studio, Montreal; *Automata for Colour II* (2012), Whippersnapper, Toronto; *Automata for Colour III* (2014), Art Souterrain festival, Montreal; and *Automata for Colour II.5* (2013), Art Action Actuel, Saint-Jean-Sur-Richelieu, Quebec; as well as multiple paintings and studies in ink.

Leakage

Leakage connotes a movement or transfer from within or among a perceived territory or boundary. It could be from a system composed of material forms or immaterial as extraneous information as an emissions leakage — as data, or energy in a transfer. Leakage is conceptualized as a negation of material or informatics, a site or an environment that has changed where *something* has shifted. Leakage also has a performative rendering in that it encapsulates a happening, an event or rather a series of events that may relay as a domino effect. One shift in a composition enacts another, and each gesture is accompanied by an element, a material, or a creature as a play into the performative nature of another. These installations are designed to accept potential shifts over the set duration of the exhibition period with minor intervention. The work engages itself through aesthetic acts as performative renderings. This installation-as-system, or object-cluster depends on the participation of internal and external fluctuations where duration is marked as residue or traces of existence lingering on in different states as water and ink dries but leaves a real trace of its past movement. A line of coloured grime on a plate of glass indicates that liquid has transformed into vapour. A stain on the floor could be traced back to a minuscule crack in a once solid vessel. The question of what is

intentional, or what is the significance of intent becomes less relevant when things are left to compose within a mode of autonomy. A generative narrative process is telling the stories of materials enlivened through lively events such as decomposition, stain, rot, ferment, and growth in relation to technological apparatus.³⁴ A material performativity is set to transcend definitions relating to intent or outcome and illustrate dynamic interplays regarding language in the possible naming of an act as a material or object's permanent existence. This means that as all phenomena in the installation act upon and change one another in each moment, it is difficult to define through language what the work is doing. Is it intended to display evaporation, self-autonomy, self-destruction, or automated care? Rather, it is meant to perform only what it does, which is designed or set out to be somewhat unpredictable. The *artwork* is the effects that come to be, that arise in each moment and not the material structure itself. Perhaps, or further, a symbolic interpretation of leakage can be analogized in worldly events such as a habitat responding and changing depending on infinite variables. The research-creation with this set of projects enabled an exploration or expansion in regards to an ontological inquiry: What kinds of existence can be reimagined beyond containment and a perceived individuality of phenomena?

The intent with this set of installations was to experiment with materials and forms where one existence effects other beings or matter in some way, directly or indirectly. As the installation slowly decomposes over the course of a number of weeks as rotting vegetal matter, deformation of plywood, disintegration of Styrofoam, evaporation of water, all of these shifts make space for additional forms to emerge. The research was initiated at a residency in Schöppingen, Germany, in 2010, with the design of *My Perfect Life Keeps Leaking into Your Perfect Life*. In this installation three sculptures were designated as *acts* in the sense that each of the materials brought together would perform some enactment of growth or change effecting other materials, the composition of the individual sculptures, and the entire installation itself. The central sculpture was designed as a wooden platform or stage where a series of water elements, for containment and dispersal, were transferred in a continuous loop from a pool to fountain, to a tank, to a series of drip bottles dispersing dye and troughs holding cut domestic flowers (carnations). In an industrial production process many automata or machines take a role in the development or transformation of materials into new forms. However, in *My Perfect Life Keeps*

³⁴ In my work I present plants, soil and water sharing space with consumer electronics such as computers, 3D printers, data projector, camera, microphones, pumps, switches, outlets, heaters, etcetera.

Leaking into Your Perfect Life a viable end product does not exist, rather the work seeks to perform a number of unpredictable alterations on itself. The second sculpture is a set of four ornate plastic garden planters filled with wood substrate and then inoculated with pink oyster and shiitake mushroom spores. Once the mushroom culture fully consumed the substrate, a positive cast of the planter form is produced. This cast is made of mycelium or the vegetative part of the fungi, the white/off-white underground hyphae root system. These forms were stacked as a column, approximately eight feet tall, forming the second sculpture. The third sculpture was a bound flattened sphere form of compacted soil and grass seeds. A mesh fabric containing tiny solar charged LEDs served as a skin and the sphere was balanced on three wooden beams laid across two plastic wash bins. All of the materials were obtained from the local hardware store in the town of Schöppingen except the mushroom spawn which was ordered from an online grower in Germany.

I produced a series of watercolour drawings, mainly focusing on the movement and flows of coloured water as gestural line studying the points when different colours meet and overlapped as nodes or bifurcations. These slight but transitional acts were part of the narratives forming as *where things meet one another and alter — an alteration*. The water dripping on the wood stage platform begins to warp the wood significantly; a vivid pink mushroom fruits and expands out of a tiny crack in the blue plastic planter, grass grows from the sphere shifting the shape and the configuration of the LEDs lit up in the evening as the mass is powered by a solar panel and light sensor. It is an unwritten script, or a slow drama unfolding as improvisation, as in each moment, the stage and acts morph and reform. What would it be to translate these acts into language? How could they be described? This was an enactment of process where a specific meaning or directive was inconsequential, rather, the work alluded to the insensible, the unknowable, and unpredictable in each moment of living where animate/inanimate/animal/mineral and so on, are all a part of a series of ongoing changes, together.

Performativity of Things

By documenting and emphasizing, and by not marginalizing or containing differently forming growths and transitions within the properties of phenomena, these installations,

performances, and documents explore ephemeral qualities of relations. By incorporating dynamic materials, a dialogue between the *performativity of things* takes place thereby setting up a scaffolding for cyclical processes and transient documents. This series of material-semiotic experiments includes *Automata for Colour I–III* (2010–14) the subsequent work, *The Temporary Archive for Ambiguous Architecture* (2012–15), and *The Ancestry of Objects* (2013–2016), in which event-based art works continuously change form and are purposely unstable, with flows and leakages, growth and decomposition set up in reanimation. The sculptures are acts that are also propositions suggesting the possibility of future material alignments. To emphasize the objective of these experiments, the physical transitions within the forms are captured through time-based mechanisms in time-lapse, stop-motion photography, ink residues in coloured stains on wood, paper, and paint, and the remaining evidence of biological growth through plant matter, algae, and soil residue. Each residue signifies the rapid effects of one material actant with another.

In another narrative location, one that takes a leap back to enlightenment sciences/pre-modern-genetics, *Automata for Colour I–III* and *Colour Theory for Carnations* set out to portray alchemical and kinetic colour mixing, refractive light spectrums, and water pump mechanics using hydroponic plant cultures. The installations were made of hardware store components and raw lumber each featuring different simply designed stage sets. The works were conceptualized as performative sculptural habitats to portray cycles and flow of colour and water circulating through gravity based kinetics and injection systems. The dye, food colouring, enters the flora, and is absorbed through the stems in a process called transpiration to then leak over into a series of catch basins and out over different parts of the installation. Through a faulty filtering process, the colour is removed *somewhat* from the water to then cycle through the system again as the entire hue of the habitat becomes increasingly muddy as accumulation. The changing colours of the vegetal matter are documented with two video cameras that record the entire installation and a macro view of the carnation's petals. A time-lapse image is captured every ten minutes and is projected into a space adjacent to the installation. This act creates an intermittent document of the work evolving as a dynamic still life composition as cellular event. The petals of the flowers are transformed into an evolving screen or surface that reflects transpiration, which is now directly and visibly marked by the dye. This installation, with its multiple expressions of duration and movement, alludes to an ambiguous kind of moment; not a position of before or after, not a

location that cannot be considered complete but a becoming and a somewhat unrecognizable transition. This artwork series was an exploration with the notion that a moment in existence cannot be captured or represented as static. The work also alludes to the thought that there are specific alterations that do change ways of being, that do mark and effect phenomena in various interactions thus considering the effects of an alteration enacted among existence.

The carnation, the plant selected for the artwork, was one of the first flowers to be selectively cultivated by gardeners in the sixteenth century with the intent to produce novel, showy, and domesticated varieties, marking the beginning of amateur experimentation with genetic engineering (Daston and Park 1998). This flower is a commonly used in decorative arrangements and often worn on the body (as a corsage) for formal events.³⁵ My choice of this flower was due to its ubiquitous appearance in the everyday, as another topically domesticated being, connected to the central theme of this research that sought to perform acts with domesticated natures. When the flowers in the sculptures have expired, after a number of weeks, a video document, and a series of dye coloured dripping-drawings on paper remain — these drip-draws are the data records of the work's work. My intent was to create a location where relational qualities maintaining dualistic relationships between entities become paradoxical or hypocritical as a way of dissolving and then retracing binaries. Congealing separations is a materialized method as entities are not identical or existing in a permanent phase of materiality. But, in order to perceive something or name it, a figuration may form. This research is about a deepening perception as well as in addition to observing subtle transitions in gradient, hue as minute differentiation in what is termed colour. It is also about complex interplays between aesthetics, relational shifts in knowledge with acts and specific forms of positioning ideas to be contemplated as materializations of difference.

In addition to the installations, a series of gestural logic drawings and paintings as schematics further help to explore these ideas and document the process of working in collaboration with such an assemblage. I was open to what could happen, to what the materials could express or become. I was also thinking of ways to include matter and notation that might be used to generate and contemplate an ephemeral form of data or information. How does a sculptural, process-based artwork act as an assemblage of diverse materials and components, and

³⁵ The cultural signification of specific flowers is another topic I will not entertain in this text.

then activate or surprise in unexpected ways? The name of the work through the term *automata* is used critically. I do not want this installation to be automatic, but more alive-like, merged with a practice of expanded painting, with colour articulated in air with lines and drawing, and with clear vinyl tubing as vessels that reference fluidity and bodies. The installations are meant to become a mode of being, a slough-like hub expressing emergent behaviours whether the pumps and motors are on or off. It is a distributed system, one that attempts to balance the flows and the content of each tank through multiple timers, drip gauges, lights, and evaporation levels that vary daily.

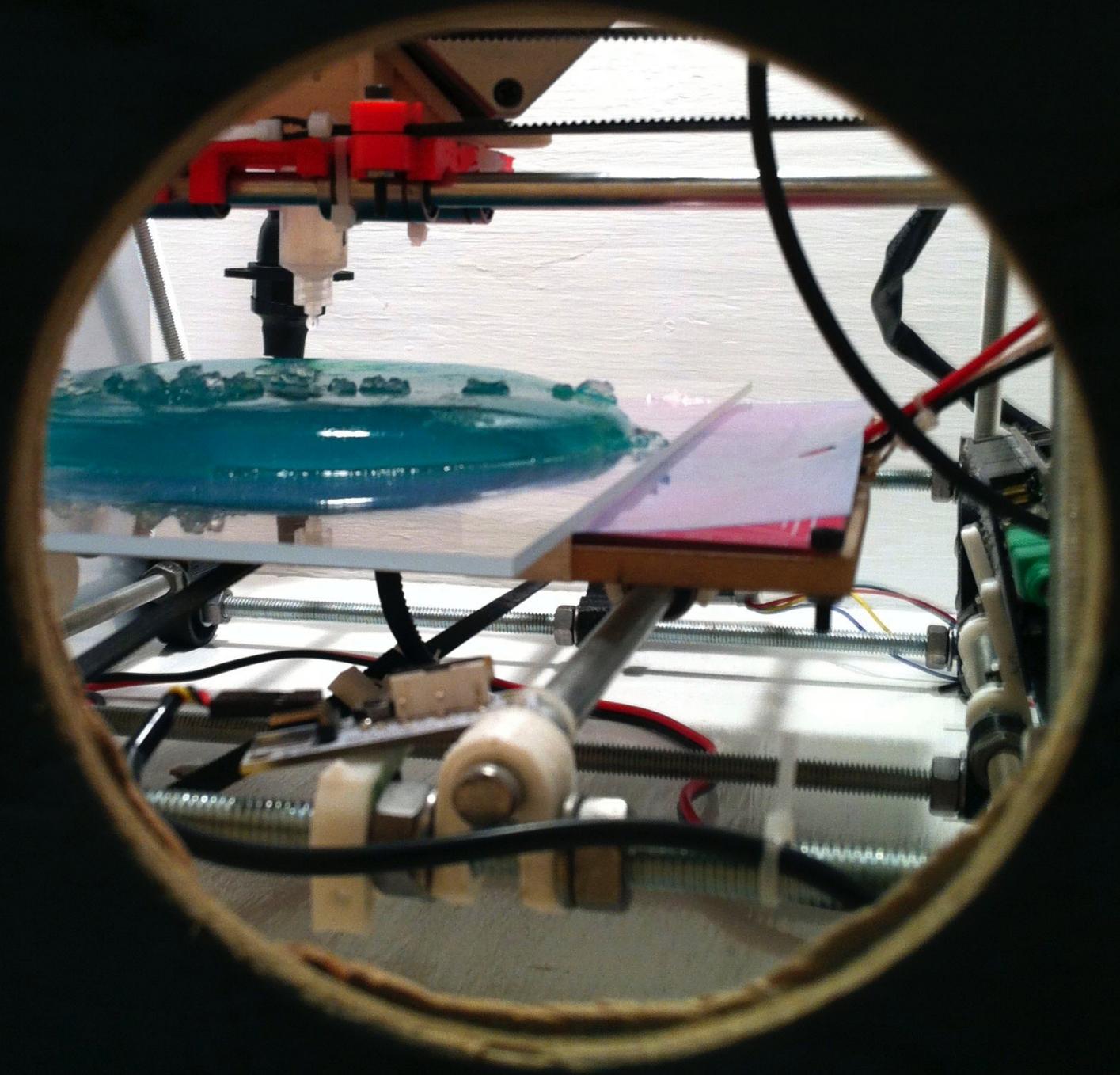
Urban habitats are maintained and supported with concealed plumbing and infrastructure, yet there must be a delicate balance within these systems to keep them in flow — or not, when they cease functioning. A constant movement of waste and water runs through the buildings and under the streets. Each city is a different microcosm with interconnected components; containerized architectures, public parks, roads, grids, paths, and channels for movement that exude an illusion of control or one of chaos, depending on what the critical whole expresses at any given moment. The constant humming of pumps in *Automata for Colour* can be soothing— or irritating, like the rising and falling of repetitive waves of traffic during rush hour on a busy street. Water, air, and electricity pulsing together, all around bodies and matter. This artwork is envisioned as a segment of intestine, or a septic system turned inside-out and repositioned in an imaginary place.

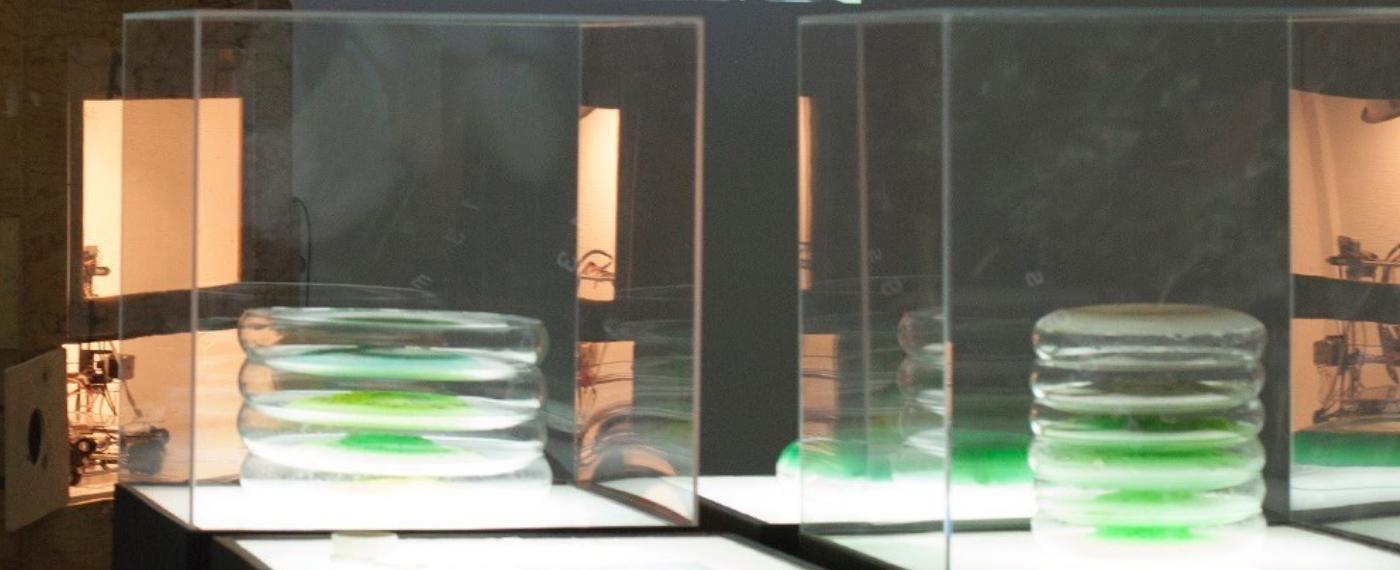
In *Automata for Colour*, the work clashes or confuses cycles of life and processes. It illustrates an exaggeration of the efforts and imagined control that is exerted for aesthetic purposes by inviting processes of repetition or filtering onto other living bodies. It is an assemblage of petals from flowers, affected by transpiration with dye, the notion of a theory of colour, hundreds of years of selective breeding of flowers for aesthetic novelty, and the excess produced, which reenters the earth — the material result of art production or commercial greenhouses. It also references the excessive amount of fertilizers, plastics, synthetic growth material, and water used to sustain the growing of decorative plants and many other forms of agriculture. In this series of installations, all parts begin to resemble a habitat, as rhythms and cycles emerge and then merge, forming a kind of ecology unto itself. Although it is initially a virtual habitat, which could be defined as constructed or simulated in a seemingly closed system, it slowly becomes a little less definable. The assemblage does not act in a predictable way as

fungi, algae, and bacteria enter into the space while others leave, such as water or minerals, thus negating or building on one of the main characteristics of the system: instability and change resemble a speculative kind of living, and it, this thing, *does* live. The *Automata for Colour* experiments were developed over multiple years and act as an example of how in a research-creation practice the material manifestation accompanies research with concepts and content. One can write about a concept-project explored through the material expression of visual art but until materialized this set of ideas remains abstract. When the concept-project is produced through the studio practice or other physical articulations the outcome is rarely what was initially intended in the conceptual design. This movement towards the unknown as the continuous production of generative growth and becomings are material-semiotic acts as artistic research.

Live Archive

One practice within visual arts is the juxtaposition of the name of an artwork to a material configuration as a conceptual intervention calling into question the social or cultural implications of a given assemblage. For example, one concept that I pursued was questioning the stability or authoritative figure of “archive” by creating living, growing, rotting, dysfunctional, archive collections with living spores. These live archives were designed and stylized with material apparatus associated with object preservation such as sterile environments, round glass vessels, plinths, vitrines, and a museum style curation of a darkened room and the objects lit from beneath using light boxes. By working through a number of material decisions the qualities of a socio-cultural entity, such as an archive, surfaces and can be explored or intervened upon through material gestures. This is a way of generating dialogue through enacting that depends equally on conceptual linkages and evoking thought through specific material arrangements.





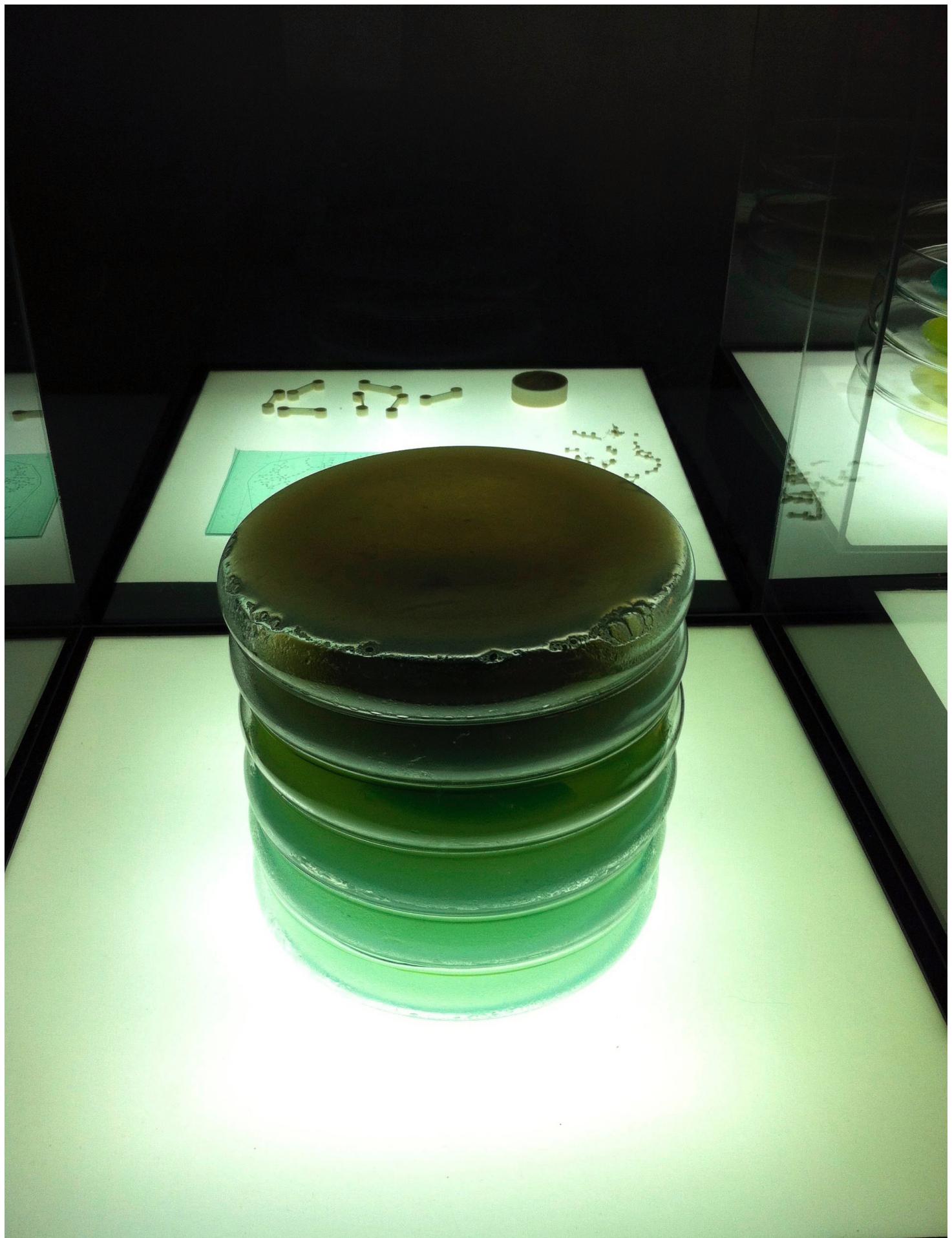


Image this page, next pages (113-17), *Temporary Archive of Ambiguous Architecture* (2015), Video Pool, Winnipeg.













Each “archive” is generating or performing something new and the notion of object-stability is interchanged with flux and growth.

The Temporary Archive of Ambiguous Architecture (2012-15)

A concept of *archive* was expanded as that which expresses emergent growth and change through generative compositions in the installation *The Temporary Archive of Ambiguous Architecture* (2012–15), with four versions exhibited thus far. The project situated an interactive process for 3D-printed, fungi-spore-inoculated agar-agar compositions that would decompose or effect 3D printed PLA plastic vessels.³⁷ The 3D printer is connected to a micro-controller that reads signals from a piezo microphone sensing vibrations or movements in the space. When people move around the installation, this *mimics* or alludes to mycelium networks sensing and responding-to activity in the earth. When the sensor is agitated, one part of a simple geometric shape is extruded from a syringe, which has been placed on a modified RepRap Prusa printer. The gel lines extruded onto agar-agar jelly shapes are filled with spores. The spores then grow their own forms or extensions dismantling organized space with the micro-environments printed by a mathematical apparatus. The 3D printer uses a simple programming language, G-Code, to direct the movements on an x, y, z Cartesian axis, where stereolithographic configurations of 3D objects are sliced into layers of two-dimensional coordinates stacked upon one another. The printer relies on habitual human modes of perceiving space in two and three dimensions. The assemblage of the mathematical apparatus acting with living spores combines and layers habitual modes of constructing sensory space with another kind of temporal quality arising out of the inclusion of a living being. The spores perform rhizomal or mycelial growth as an additional and unpredictable dimension. The compositions produced are plates of coloured agar-agar jellies with different fungi and bacteria growth patterns. The intent of this work was to combine digital and cellular reproduction to echo complex symbiotic relationships between living phenomena and techné as a series of experiments.

There are three archives in the 2012-13: *Archive I: Math and Mycelium*, a modified RepRap 3D printer reconfigured to print with agar-agar gel medium and mycelium spores when

³⁷ A mushroom, *Aspergillus tubingensis*, had disintegrated the petri dishes of the researchers who had collected samples. This fungi is also discovered to be feeding off plastics in landfills.

it senses vibrations in its immediate environment as an analogy to fungi-sensing behaviour in the earth. The printer prints the mycelium into common shapes and patterns as a starting point for the mycelium to then grow its own forms. *Archive II* is a series of 3D-printed objects modelled from mycelium patterns, fractals, and geometric forms displayed on light tables. In the 2014 version I used a PLA filament that was part wood/part plastic and small barnacle shapes were used as scaffolds for the spores within tissue culture containers. In the 2015 version, twenty-four-inch towers, 3D printed vessels, were filled with fungi-inoculated substrate to explore the possible material transitions that could occur where the fungi effects the plastic vessels. *Archive III: Still ... Life* is a video that uses DIY 3D scanning and open-source animation software (Blender) to model and describe the artistic process involved in creating the artwork. This work contemplates layers of instrumentalization within traditions of measuring and visualizing earth through architecture, formulas, and x, y, z Cartesian axis planes. It interrupts these mechanisms by engaging the printer through vibration, rudimentary, but suggestive of imagining difference or a possible semiotics through sensing and movement. The intent of the artwork is to bring into focus qualities of mycelium that visitors may not have known or thought about. The idea of the artwork further destroying itself through decomposition is yet another cue toward material remediation and agency. I explore the place shared by different entities brought together in these assemblages: *What might a spore-agar-light-table-G-Code-footstep be like?*

Like *Automata for Colour*, this work also queries the generative potential of assemblages: How can the paradoxical figure of a *living archive* reveal qualities of an existence? Can such configurations, those that blend and highlight different modes of living begin to shift perception away from the notion of closed, contained, separated individuals? Even in a meticulously sterile environment, there is life, perhaps not visible, or maybe even concealed or considered inanimate matter—yet, life reimagined as an emergent, growing archives, where each moment, tomorrow, or next year, the relations between things are inevitably altered. In this work, the archive component questions systems of order that may be placed upon relations. My use of archive is meant to challenge the idea of archiving or perceiving phenomena as existing in a fixed state or condition. As a research based project, *Temporary Archive* sets up a series of material-semiotic events that position overlaps between the imagined, a speculative subjective, in this case the fungi growth, as an open experiment.

As research-creation, each artwork consists of a set of problems or inquiries that can be

expanded out and tested through different materialized articulations. Each formation is purposely unique in order to reposition and enact aspects of the work that emerged in previous versions. In these research-creation projects it is less predictable as to what shape or direction an artwork will form as this will not be revealed until the end of the exhibition or residency. It is in this format that I can support a sense of relational play and openness, thus, evoking a possibility to relearn or rediscover a material, being or feeling. This is how I have begun to think of storytelling and narratives within my projects, as a proposition and departure but also a place to experiment within. Following is the conclusion to this text where I reflect upon different considerations for future artworks.





Image previous page, this page, next page, *Cosmograms* (2018-) beeswax, laser etched panels, textiles, cast bronze coral, cast hydrocal coral. Banff Centre for the Arts, Banff.



Conclusion

Aesthetic propositions that invoke a radicle assemblage suggest that there are no real divisions between anything. Rather, life is a state of perpetual becoming with diverse beings surrounding, and moving through one another as flows and overlapping spheres of existence. In such a research-creation practice, whatever it is that is sought to be understood or moved into articulation, (for example human and more-than domestic and creative co-relations, plants as kin), was translated into a series of experiments tested through different material articulations. Such experiments do not start or end after an exhibition or when leaving the gallery, kitchen, park, or studio. Often the spaces that aesthetic objects or concepts are made for are quite defined, such as galleries or museums, studios, or institutional—places or sites that have been programmed to function in a specific way. Research-creation art-based propositions are often located outside galleries or museums in less-defined sites; they are mobile within community spaces, or networked, and are activated and actualized differently (see project examples in Appendix, *Greenhouse Studio* (2010-11), *Animated Landscapes* (2010-11), *Olfactory Map of populus* (2011-12), *The Committee: Propopopo* (2013)). With performative assemblages, there is an intertwining, as the effects (in this case, the artwork) are connected to questions of living, disruption, and being intimate among phenomena. The questions that arise do so as they are intuitive or visceral, like exploring feelings of alienation as an empathic gesture with domestic plants, in *The Extraterrestrial Botanist* series (2012–17). Or imagining what kinds of possibilities can emerge when anthropogenic biotech meshes with vegetal beings in a fictional narrative for a video project, such as *In Search of the QR_ebra Plant* (see Appendix, 2013). Questions unravel as to different ways in which beings may adapt and take part in an expanded understanding of relations and how these effects continue to enact and change the world. All of these things have to do with changing what matters by thinking deeper with materiality in differing situations. Asking questions through multiple assemblages imagines within eco-aesthetic propositions and articulates feeling through emergent transitional affects.

Both my past research-creation works and the projects now forming are part of an interconnected dialogue, wherein the portion that is expressed in an art exhibition is a fragment that can be temporarily separated, paused, and articulated. Often what is named as the artwork is a partial gesture or an eruption that has surfaced somewhat like a hyphal knot in a fungal

lifecycle, followed by primordia, pushing above earth, or emerging from within dung or woody substrate. The mycelium network underneath is quite vast, and the fragment that emerges is a fleeting event, like a series of fruiting bodies, an ephemeral expression of something deeper and inevitably symbiotic. How does one comprehend the network that one is interconnected within? Agencies of resistance, of resilience, can begin with intimate relations by looking at phenomena that are very close—at things or bodies that share a place. Beings that co-habitate, parasiticize, or mobilize, due to proximity to one another in spaces shared and therefore are intertwined into everyday movements and activities. Territory-spaces like house, pathway intersecting, becoming part of one another, those that are edible/ingestible, micro-things, yeasts, bacteria, the mosaic spider on the terrace, a moonflower, or fungi distributed through the ground. All these possible engagements with different phenomena folding into and out of one another constitute the formation of strange intimacies. What happened over the duration of my different experiments was a gradual movement from the intimate territory of body-domicile toward less familiar beings, enlarging the circumference of relational growth in a material context that became relevant as learned intimacies of knowing unfolded. From houseplants to a particular tree in an urban park, I was sampling and thinking about how co-choreographies become shaped and are encouraged. A sense of careful tending was a potential that emerged in this lived, experiential research. From the care of domesticated plants I could then learn to contemplate networks among inter-generational groupings of birch trees along the forest trails. It is of being with, among, feeling, and thinking with connectivity, of extending materiality by learning from different beings and becoming more aware of their extensions and weird meshes. Through this work I developed the ability to adapt, to enact transference toward understanding and living aligned with a concept of within, of inter-relationality. This involved a conscious process of material-discursive engagements to undo preconceptions, habits of memory, and changing experiences, and then toward learning in places where familiar habits and routines are not as relevant contextually, but are nonetheless patterns of life-being similar to what Eduardo Kohn calls a *semiotics of living thought* (Kohn 2013). Semi-composed queries revolve around possible traces from each distinct intervention: Who am I in this place? In examining segments or traces, it may become apparent as to where intersections have materialized: I am what I have become through all the stories I tell myself? Deciding to hone in with a specific being or object will change relations and events in the world: What am I when these stories expand and include other beings

such as trees? How is “I” existence interwoven with “tree”? How the universe changes and how to make changes that matter is important and entirely co-creative.

All the works herein intermingle ecology and energies—from living cellular beings, such as plants and microorganisms; from energy-based phenomena, such as radio waves, electrons, and photons; and into interactive installations and performances for specific social and geophysical sites. Working with creatures common or overlooked due to size or perceived insignificance, such as yeasts, fungi, mollusks, and plants, acted to facilitate perceptual-conceptual shifts. These processes involved a constant appropriation of materials and techniques from unfamiliar practices into performative gestures. In these projects, ideas, processes, and apparatus were sampled from laboratory science, botany, horticulture, and the culinary arts.³⁸ The projects interwove improvised hybrid techniques into aesthetic forms of amateurism, questioning an onto-epistemological production of techné, while assuming a generalist position with lively beings. It was important to create situations that could not be instantly classified, and that are chimerical and messy in an attempt to escape categorization. Throughout the propositions, duration and the ephemeral quality of events that incorporate diverse beings are explored and challenged using concepts such as live-archive, leakage, and emergent growth patterns. Over the duration of the doctorate program, many unique propositions and experiments, rather than a single, focused project, were required to get closer to an understanding of a way of *letting be* with firstly domesticated natures, and then in an expanded worldly context of more-than.

We need to make kin synchthonically, sympoetically. Who and whatever we are, we need to make-with-become-with, compose-with-the earth-bound.

—Donna Haraway (2016, 102)

The relational understanding regarding plants and people that I sought through this period of study was not to be found solely in a particular place or being, in a rock, or through an artwork, a plant, a theory, or a book; rather, it was and is everywhere—not as a form of vitalism, but as an intensity or force of differences. The idea of continual expansions and contractions of plants into rocks or gases acts on an entirely different scale—a scale of comprehending multi-species existence as ever-unfolding. Sometimes existence is felt as an emotive shiver moving through the

³⁸ For example: Kombucha SCOBY, vinegar mothers, agar-agar, yeast cultures—the “other mothers.”

body when encountering another living body—the intuitive feeling to look behind you and across the hill, connecting line of sight with a deer paused, both beings held briefly in an exchange. Or the leaves on trees, in thousands of slightly differing stages of emergence—as dynamic growth where a luminescence of light and colour in movement is entirely too overwhelming to comprehend or to visually inhale. It feels dizzying to move quickly through bushes and trees along a path as there is continual novel sensory detail. When you stop trying to *see* and become more of a flow, another movement interwoven with leaves, branches, and grasses, then you may exist in a place. My inquiries on perceptual experiences propose a tracing-out of methods for projects based on the collected learnings that emerge—that is, considering more than just a passing idea and how it might be expressed through an aesthetic medium. Which creatures have helped to think through and with these ideas? The multi-species companions on my search for being in-existence involved many; Apple snails, Brugmansia, Meow-Meow, Rabizore, Grendel, Hank, ginger-sheep, squirrels, raccoons, the Tree (in St. Zotique park), spirulina, agar agar, mimosa *pudica*, moonflowers, SCODY's, peace lily, potato clones, carnation, different mushrooms, dozens of houseplants, *The Team* (a group of air plants) and many more....

Through aesthetic and performative research, I explored concepts in the design of hybrid propositions that might embody individual, material-based acts, as well as broader conceptual events. Research-creation is an interdisciplinary process that results in some form of material gesture. The process is informed through research methods or materials, which may or may not be associated with an artistic practice—for example, the *Automata for Colour* installation series required specific research into the use of and design of hydroponic systems and soilless horticulture technology, as well as a literature survey of plant cultivation from different fields: biology, botany, philosophy, and science and technology studies. Aesthetic research is somewhat distinct from a museological or educational research process, as in the experience being produced to illuminate the subject—in this case, a hydroponic system—its elements are often contorted through further intervention rather than explained via didactic aids. In this case, specific plants were included based on a critical reading of the socio-cultural history of plant breeding (carnations), as well as changes to the aesthetic of the water system (from black tubing to clear tubing, to emphasize the bright, synthetic dyes used in the work, and to use the tangled,

multi-coloured tubing systems to “draw” in space, referencing veins, the body, and flowing, living systems).

An individual, material-based act is a gesture that is part of a sensory experience or performance to bring together materials and phenomena to organize a unique event composed of multiple interacting and emergent acts. The acts are the defining but variable parts of the event, and substitutions will alter the effect of the work, allowing for infinite flexibility and differing iterations. I engaged in a performative methodology wherein many of the materials or beings might change their compositions over the course of an event or exhibition. For example, many projects consisted of multiple iterations: *The Temporary Archive of Ambiguous Architecture* was exhibited four times; *Automata for Colour*, five times, one of them studio-based; and *The Extraterrestrial Botanist*, three times. Each time a project was exhibited, many or most of the acts involved in its production changed. This was due to varying factors, such as a site-specific response to a different venues or exhibition formats, inclusion of different living beings, altered spatial design, experimentation with different materials or processes, or new questions that needed to become part of the work. In altering the design of these interchanging, material-based acts, and across multiple iterations of conceptual and performative events, a process or creative methodology for each project gradually formed *through* the material practice. By altering parts of an installation event slightly, many different explorations of similar questions could be examined from multiple perspectives. The artwork as an expressive entity could only be a partial semblance or rendition of a previous iteration, even though it was, from another perspective, the same event. An emergent process evolved and became aligned to this overarching conceptual strategy, echoing the notion that living phenomena are ever-shifting. This became the underlying concept for installations produced from then on, so that all the artworks were intentionally unstable, shifting, performative, and unpredictable. A basic structure would be developed, wherein acts were sketched out for the materials and phenomena to perform within. What emerged over time was the essence of an assemblage, temporarily assigned to a specific location and to that particular aesthetic event. This mode of thought dovetails with (re-)expanding a sensory-based consciousness that includes an array of stimuli intermingled with beings that are located outside the normative bounds of human experience.

Many acts and events operate within an anthropocentric frame—to find a benefit to human based on capitalizing creatures as a resource; economically, for entertainment, or in aesthetic

experiments. In my study, this problematic habit of a humanist mindset became recognizable; I toyed with this and pushed it around further in hypothetical dialogue by interacting with creatures such as snails, cultures and plants. This was a caregiving relation, where I would maintain their environment with fresh water and nutrient, and they would demonstrate the life of containerized creatures through different behaviours and happenings. Working and being with diverse living phenomena (including human-animal) is impossible to avoid, and, when thought through with a range of aesthetic and theoretical possibilities, modes of thinking and ways of being are enlivened. Snails, along with many other creatures, can play a part in creating an opening into relations in ecology and matters of care. The various artistic experiments that I have discussed, tending toward questions of domestic entanglements by appropriating or hybridizing activities from the culinary arts, gardening, 3D fabrication, plumbing, and consumer electronics, enacted contour-like relations around phenomena of-nature as well as anthropogenic *things* — natureculture assemblages. Binaries are one thing—one force together, like plants and minerals as life and elements. Is the materialization of things both a way to relate to an ontology of materiality and a performativity, or a *how*, of being? How to become, and what to think into being next? This project was about learning to form relations that begin by gently touching around the existences of these beings of proximity and interest, while trying to work through difficult narratives and acts, such as keeping living beings in domesticated situations. All these entities, self-beings, creatures, objects, and activities, which may be categorized as practical, conventional, domestic, or utilitarian, form a tension as a resistance-in-dialogue in opposition to aesthetic subjects that fit comfortably within the discourse that surrounds representational artistic works.

With sustained attention to the immediate relations that encompass beings or domestic places, acts are dispersed to think beyond, or toward and into other unfamiliar places with multi-forms of activity and engagement. This research definitely lead to new questions especially in terms of semiotics and language: From the places we refer to as *kitchen* and *yard*, to those such as spectral-cave, hive-assemblage, multi-dimensional-slough, coral-brain, or tree-sensor-matrix, the names placed on places reveal something of the acts that are engaged there by those who name them. Considering whether words are constructed intentionally, or come into existence through a habitual use that has been oppressive and harmful, may embody an active practice of dissonance. Is the practice of naming what does not really exist as individual or as a predefined entity, in other words, all phenomena, considered a harmful practice? How might deterministic naming practices

be recognized and altered? When is language a harmonious zone, and can such qualities be expanded? What kinds of acts constitute becoming with uniqueness or difference? Understanding relationally occurs in an extended and more-than time-space that requires taking space to become intimate with beings that have been related to characteristically as something outside and divided—as a pest, a weed, a source of food, a resource, a commodified being. The world is much more interesting and playful, less harming, when it is co-performing, co-habituating, co-agenting as nurturing care, tender curation, or existence woven with and as shared, unknowable, earthbound beings. Enacting this condition together with diverse phenomena as an ongoing performative practice may make a difference. So might making strange and radicle assemblages through weird encounters and experiences every day. Forming intimate relations with unfamiliar creatures nurtures the growth of earthbound stories to think about and share, expanding human understanding and engaging in gestures that matter.

Image next page, *Future Centre for Future Art* (proposed) *nevis, nevis, nevis*, Nevis, West Indies (2018-)



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Appendix: Projects, Proposals, Residencies

Flock (2008–11)

“Into the Street: Avenues for Art”, Southern Alberta Art Gallery, Lethbridge, AB, 2009,
“Flock”, RAIQ, Arts Interdisciplinaires : Hi-Tech, Lo-Tech, No-tech ?, Montréal, QC, 2010, “Flock”D.N.P Departement des Nuisance Publiques, Eastern Bloc, Montréal, QC, 2011

Relational Play + Improvised Performativity

As I navigate public space with another individual, we tether ourselves through our senses. Over time, the ability to recognize and interpret my companion’s nuances and communicative gestures becomes increasingly intuitive. Even with unannounced stops and hesitations, we move together in fluid rhythms. Yet we know one another, we are together purposely, and do not rely on verbal language for simple navigational tasks. Alternatively, how does one adapt when spontaneously attempting to understand and communicate with those you are unfamiliar with? How can I understand others’ movements and intentions when we have only just met? For example, here I think of what I will term the pathway dance. This is where two strangers moving in opposite directions cross on a narrow path, and must decide which side to walk on in order to avoid the other. In the pathway dance, the communicative gesture is misconstrued, and the individuals dance together from left to right in an attempt to avoid collision. This is usually a somewhat awkward and comical moment. *Flock* explored this area of human communication using a task- based game, bicycles, a wearable LED light-circuit display system, and sonar. Modelled on birds’ flight patterns, *Flock* set up the parameters for individuals to demonstrate a range of mediation and communication strategies in open, unfamiliar, and dynamic environments, such as urban streets, back alleys, and other pathways.

Flock employed a set of wearable cycling capes that display alternating light patterns permitting participants to follow along in the context of a multi-player synchronization game using soft circuits, small LEDs, and wearable micro-controllers. Each cape displayed a number of different circuits for participants to adhere to within a set time period (thirty minutes). The wearables simultaneously displayed one circuit pattern at a time, and did not organize the individuals or direct them to a specific position within the displayed



Image, *Flock* (2008) Concept Sketch.

configuration. This was the main challenge of the game: participants spontaneously develop a communicative system for navigating themselves as a group. The wearables also contained a sonar device, which created a proximity parameter. Each member of the flock had to stay within a certain distance of the others, thus using technology as a prosthetic to provide participants with the experience of a sonar-sense organ to navigate in a group, and mimicking creatures that use active electroreception or sonar in conjunction with their auditory system. The work explored the variety of tactics that may emerge as individuals attempted to stay within the parameters of the game. The game delves into the areas of gesture-based communication and impromptu decision making. How quickly can participants adapt, and can they become fluid in their movements within the specified parameters or circuits? *Flock* valorized intuition, group dynamics, and improvisation above repetition and rehearsal. Another element of the project was the aesthetics and poetics of movement, specifically as choreographed movement. Here the work was influenced by

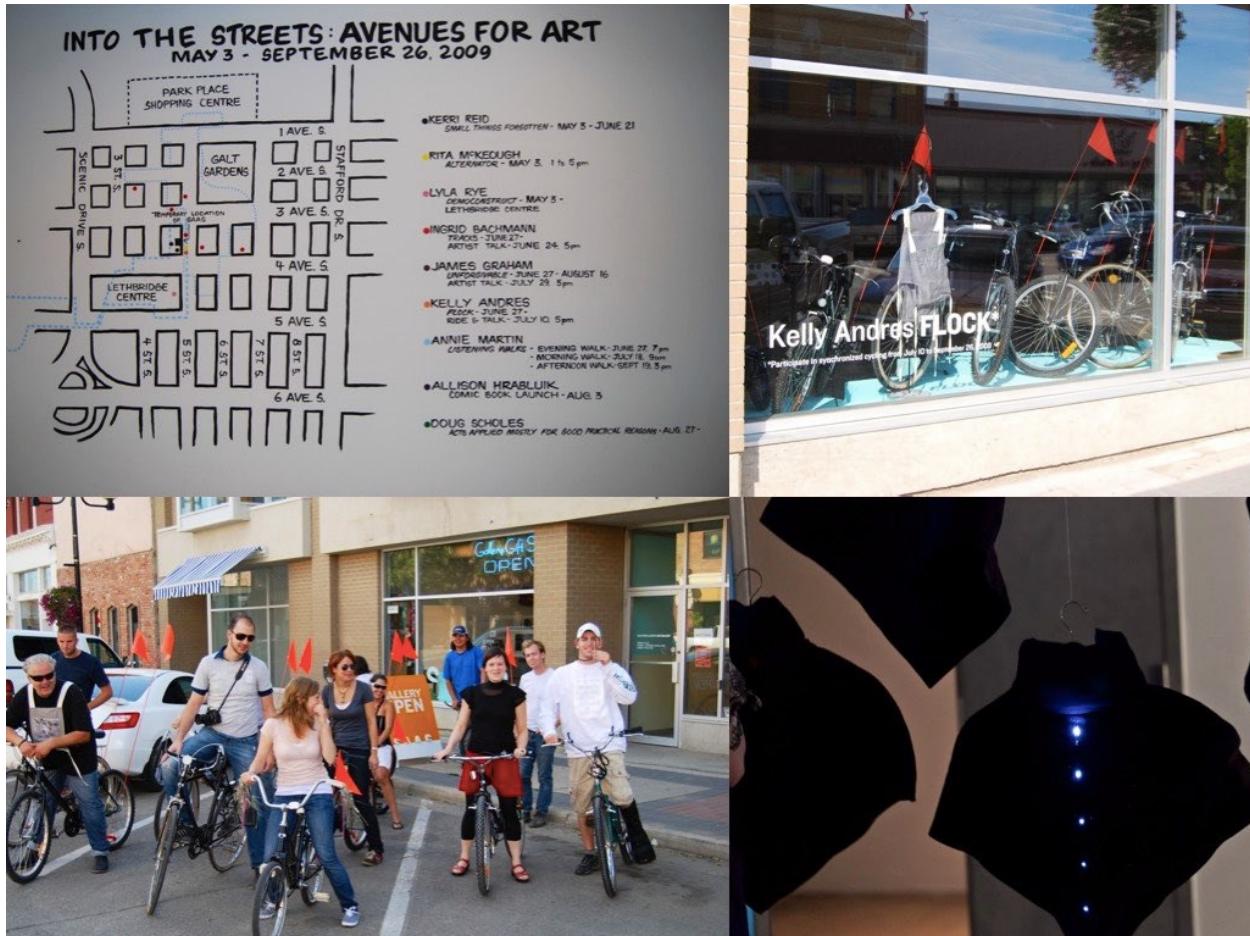


Image. *Flock* (2009) Southern Alberta Art Gallery, Lethbridge.

flocks of birds and the V formations that are understood to increase the efficiency of long-distance migration for large birds, such as geese and swans, and for masses or swarms of birds, such as sparrows and swallows. Synchronized swarms are a protection and proliferation strategy for mass feeding and discouraging predators. In relation to bicycles, to swarm or to ride as a flock of cyclists can feel empowering. To ride with a group is exciting, dynamic, and very much a loosely choreographed activity. Even to watch groups of riders together is spatially poetic. From a critical mass, to trios of night riders, this activity is fluid and dynamic, and the rushing wind and self-induced acceleration frees one from the ground and gravitational hardness of the body and of walking. I have often experienced a form of synchronization in this mode of travel—plus it is fun to ride with others, to follow or lead, and to navigate through the streets, free, to some extent, of traffic lights and transportation system rules (especially at night, when the streets are empty of



Image. *Flock* (2011) Eastern Bloc, Montreal.

cars). The other concept for the sonar sensing cue is for participants to think about how they navigate beyond the visual. It could even be experienced initially as a disorientation technique, which provides additional information that may be either helpful or distracting. Sonar is used by some creatures, like bats, fish, and dolphins, to locate prey, to communicate, to navigate, and to analyze their physical surroundings. I introduced a sonar parameter to evoke an auditory navigational technique and to make the game a bit more challenging. To follow the visual cues of the animated LED light configurations was one task. Another was the ability to stay close, not to wander from the flock, and to hear proximity to others instead of just seeing it. The sonar prosthetic was developed initially in a workshop at Studio XX, where I worked with artist Patrice Coulombe, and later with Samuel St-Aubin, at Eastern Bloc, to develop a working prototype for a residency-exhibition (Department of Public Nuisance, Eastern Bloc, 2011). This prototype included a sonar-sense device wired into the collar of the wearable cape, where the sensors check for objects. If the device does not sense the presence of another rider within a certain distance, it issues a warning sound. The cloaks are set up to communicate with one another through an XBee, a wireless communication device, which acts a bit like an oscillator in that a pace is set, whereupon all the wearables receive a timed tempo to allow for a state of

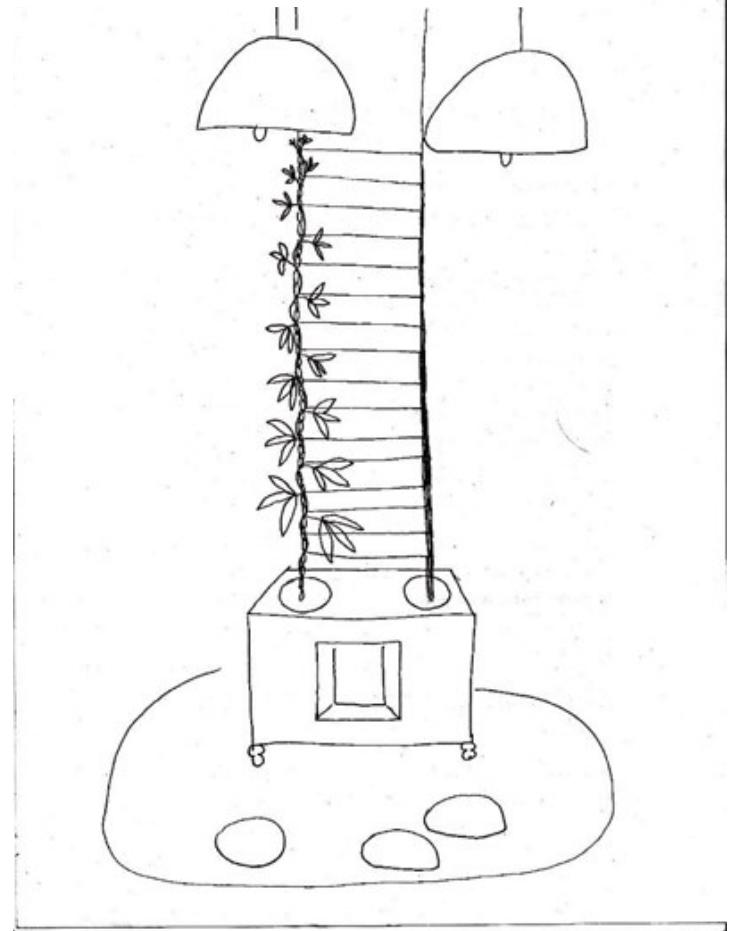
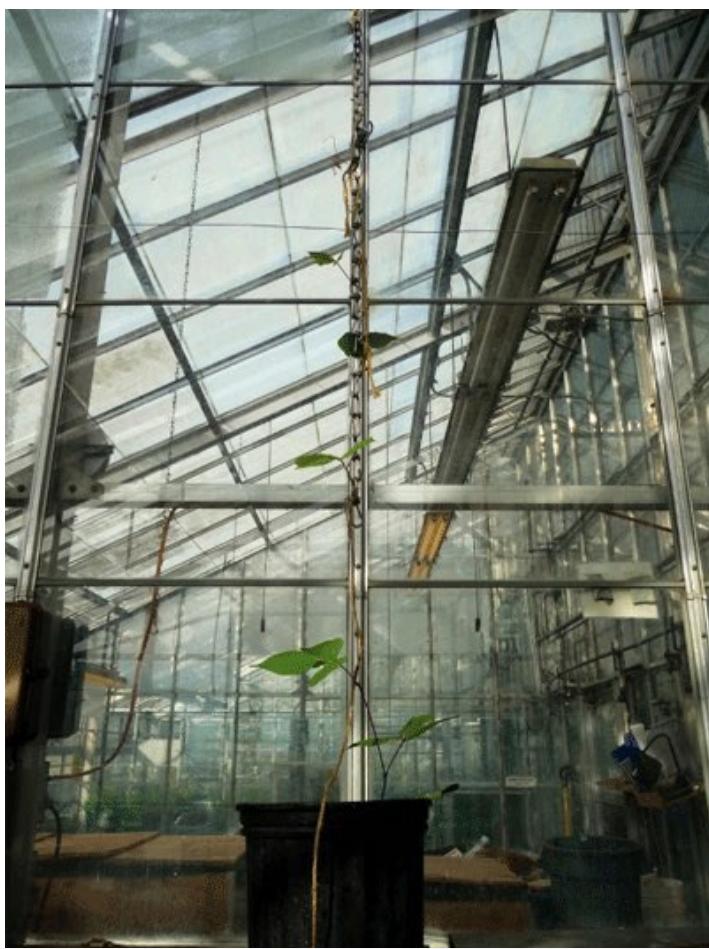
equilibrium to occur. The work is an exercise in rethinking navigational cues and the use of public space as a place for a collective performance, an emergent play about ways of being in the world.

Time Pieces & Tropisms: Greenhouse Studio (2010) www.kellyandres.com/nastic.html

Perceiving and Sensing Beyond Normative Thresholds

Plants are always moving in a circular direction, a spiralling, from the moment the first cotyledon emerges from the fractured seed husk. This movement was studied in depth by Darwin (and others) in the late nineteenth century through a series of analog motion-tracking tools designed for analyzing the movements and behaviours of various plant species. Perceiving the physical movements of plants is difficult for human perception, as plant movements happen in a different time-space, which can only rarely be witnessed through unmediated observation. To perceive the circumnutations of plants, technical devices, such as photographic time-lapse, are required to record growth over longer periods of human-time. These recordings can then be animated so that it is possible to view dynamic movement, a time-space where the slowness is erased and made parallel to human prehension. In *Animate Form*, Greg Lynn suggests that animation “implies the evolution of a form and its shaping forces: it also suggests animalism, animism, growth, actuation, vitality and virtuality” (Lynn 1999, 62). Through stop-motion and animation, it is possible to witness how plant beings grow, change, and adapt in various conditions. It is captivating to view time-lapse documents and to contemplate the plant’s gestures, a movement that exists on another plane, and remains mostly non-perceptible unless reproduced through visual-technical means. Early in my experiences with different plants in regard to making a place for sensing, movement, choreographies, observation, and time-space, I established a set where I could be continuously present in a changing surround of growth. Setting up a space in a greenhouse (the set), where these beings might grow and be visualized both by

Images. *Growing Up* (2010) Greenhouse Studio, *Timepieces and Tropisms* (2010) screenshot



kellyandres.com/tropism.html

... 🌐 ⌂



text



Time-lapse in plant studio from Cecilia (camera's name) between March 18th and April 14th, 2010 with a few breaks - the camera was unplugged during Easter weekend from a vine growing up the wires and the camera was stopped for a few days during our first installation garden party.

video: Alison Loader, 2010

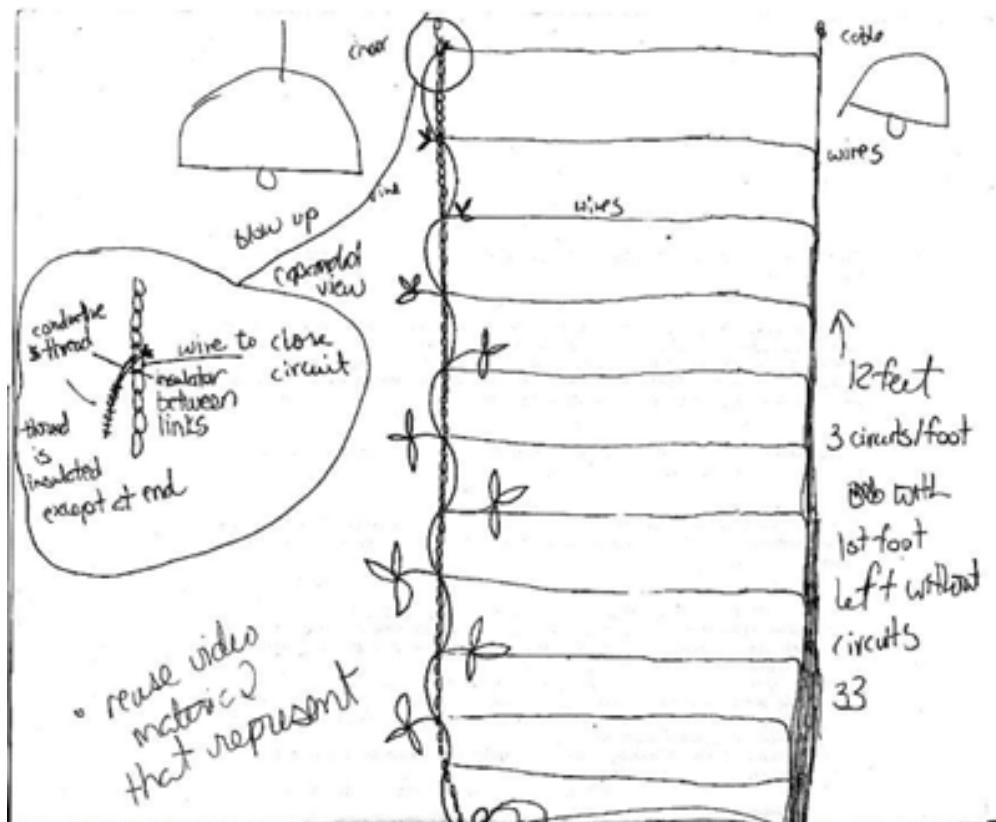


architectural surround



of becoming that was perceptive of these radicle-beings needs and temporality. Plants are sensitive to their surroundings and we exist together at a sort of virtual intersection. To some extent, I would like to drift closer to their world: the slowness, the circular, a direct relation to exterior stimuli such as sun, nutrients, and rest. These complex elements make up a human's daily life cycle, but are often invisible or taken for granted: not resting when it is necessary to rest, consuming and wasting natural materials, or living in spaces without sunlight. I enter and exit the greenhouse set and the plants are always changing, always growing, and in comparison, my growth seems less visible. Perhaps my hair is longer, or I trim my fingernails, but I am not spiralling toward the sky at a foot per week like the vines, or stretching my roots to the earth inches per day like the squash—or am I?

I do not perceive plants as passive, fixed, or stable. I know they are always moving, and my perception has changed, has been altered. Not only through observing plants temporally through the time-lapse, but also by learning to perceive minute details of movement, exceedingly gradual and subtle alterations. Am I seeing double? Am I capable of perceiving vegetal beings? What are the potential applications of learning to alter one's preconceived perceptual state? Brian Massumi writes that "seeing an object is seeing through to its qualities. That's the doubleness: if you are not qualitatively seeing what isn't actually visible, you're not seeing an object, you're not seeing objectively" (Massumi 2008). The interaction with vegetal beings happens in a different place, a region that is real in the sense of being a physical space, but also unreal in a perceptual sense. It is not instantaneous, but is learned over experience and through relations. Visitors to the plant set can *be* only if they are willing to let go of a time-sense and if they can suspend the need for immediacy—if they are willing to *just-be* over hours. The interaction may seem banal initially, as it is not producing an immediate experience. Walking into the greenhouse does produce an overwhelming sensory experience as it is a place of mostly-plants as well as elements such as soil, water, and sun-energy—and this is apparent through the light and the colours, the olfactory cues and the overall environment. To engage with the plants in their different temporality, a visitor must change something in the way that they perceive. The



Images. *Growing Up* (2010) Greenhouse Studio.

interaction is a willingness to suspend one's own sense of perception, one's own markers of time-travel, and a reliance on technical indicators for a specific location in the day. A visitor must interact with an unfamiliar system in a reciprocal becoming. But is this possible for most people? How can this exchange be communicated or facilitated? How can this set be interactive when many individuals will perceive nothing? How can an



interlude with slow, quiet plant-beings express the need to expand perception to a casual

and impatient explorer?

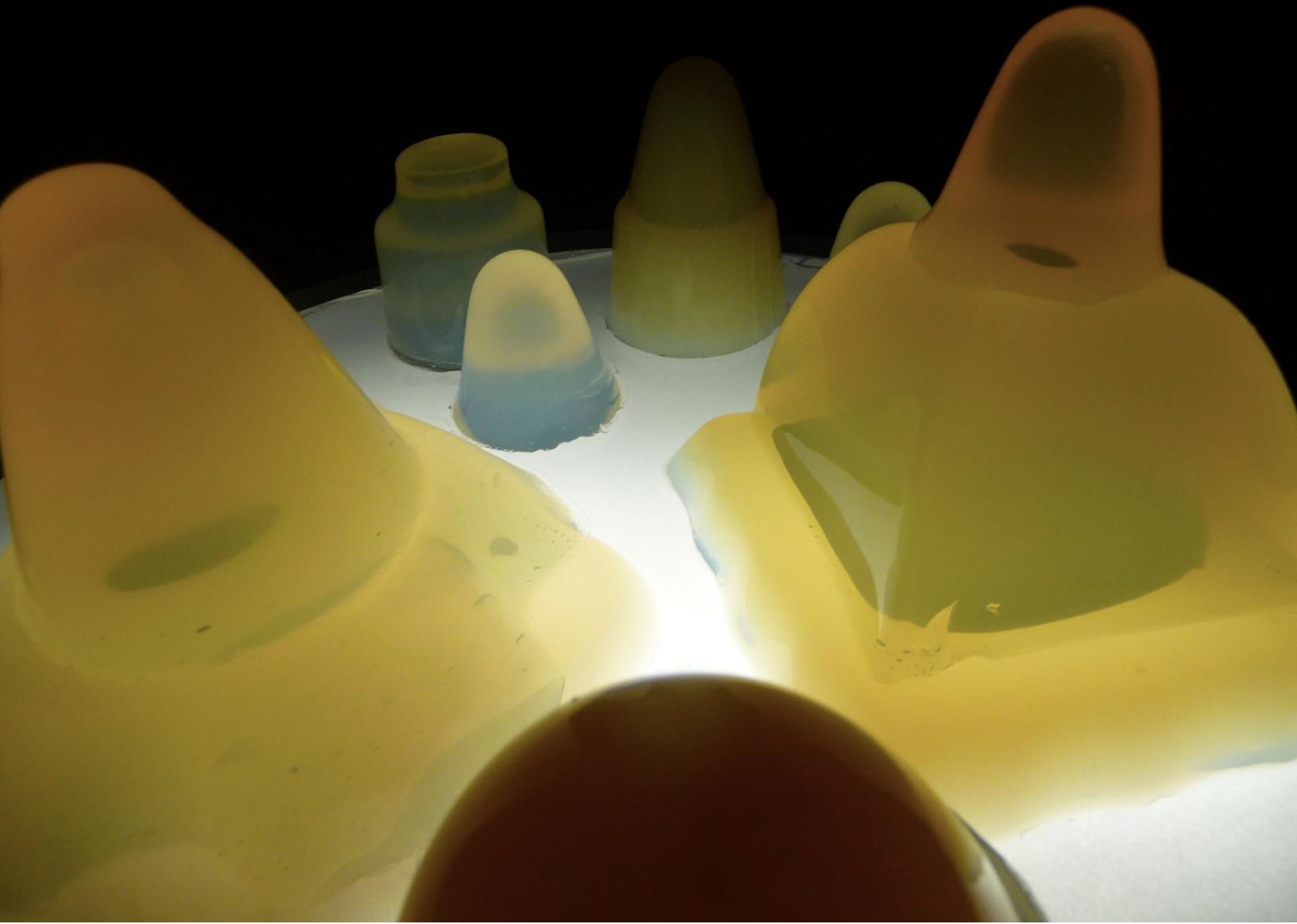


Agar-Agar Architecture (2010) Project Prototype, Fluxmedia's BioreMEDIAtion workshop, Concordia University

Multi-species Co-Creation

An imaginary landscape is topographically modelled in 3D software using rapid-prototyping to make vacuum-formed molds to cast the agar forms of about 6–20 inches high, and within a 24- inch-cubed case. Housed in public vitrines, the resulting agar sculptures serve as a location for collaborative experiments in microbiological aesthetics, combining techniques from visual arts with processes from microbiology. The sculptures explore the visualization of microorganisms, human and bacterial cohabitation, and trace conceptual ties between networks of different scales. Agar is used in both the kitchen and the institutional lab: in the culinary arts, as a thickening agent and for sculpting elaborate jellies; and in scientific laboratories, as the primary substance for growing cultures.

Image this page, *Edible Clones* (2010-11) Greenhouse Studio. Next page, *Agar Agar Architecture* (2010)



In a performative “swabbing” event and workshop, participants would be invited to co-collect samples from different sites. Participants swab directly into prepared petri dishes and then transfer cultures to the agar sculpture about a week later. The sites are recorded and subjective information regarding the choice of particular sites is included in a key or diagram indexing places on the agar sculpture in correlation with the original collection points. The sculpture would be inoculated with different spores, and common strains of bacterial growth emerge. While such spores are present nearly everywhere, they only

ANIMATED

FULL MOON
CRESCENT MOON
ECLIPSE

ELECTRICITY
IN THE
AIR

animosity

AIR
PRESSURE

where the global
warm is

Danger!

BAT
DETECTION

hostile

WINDSPEED
WIND DIRECTION

Pollutionz

Sense of
Security

ELECTRIC
CHARGE

METHANE
GAS

provide a hospitable site to allow viewers to visualize the microorganisms already present in the environments we cohabit. The sculptures are ephemeral, existing for approximately a month, or according to the incubation equipment used, and thus represent an evolving social-space experiment. The formal qualities of the fungi or mold's unexposed structure, the mycelium root network, would be echoed through the use of "bio-electronic" circuitry embedded inside the agar sculpture. Minuscule threads of tiny, surface-mounted LED lights (one millimeter in width) and a micro-controller protected with silicon regulate the blinking of the LEDs inside the sculpture. The sculptures are documented with time-lapse photography from the time of the initial inoculation to the end of the exhibition. The embedded electronics could potentially be developed into interactive communicative or sensory networks between the two sculptural environments, such that a conceptual visualization of the mycelium activity would be portrayed. The first prototype used found glassware instead of a modelled landscape.³⁹

Animated Landscapes (2010-2011) Exhibition: "Lilipod", Neighbourhood Science, Medialab- Prado, Madrid, Spain, 2010, "Animated Landscapes", DIY Citizenship, University of Toronto Art Centre, Toronto, ON, Nida Artist Colony, Residency Exhibitions, Lithuania

The *Animated Landscapes* project seeks ways to understand the delicate balances in rural and urban settings through designing and building sensory instruments and systems within an artistic framework of critical playfulness. *AnimatedLandscapes* is an attempt to open up the field of the natural sciences to activated individuals who are curious about local habitats. To facilitate new relationships to the landscape we bring together design, art, technology (electronic and analogue) with collaborative discussion to design DIY instruments that can sense, measure and communicate relevant data that is unique to each physical site and collective inquiry.

³⁹ The prototype for this project/concept was produced during Fluxmedia's BioreMEDIAtion workshop, led by Dr. Tagny Duff, Dr. Jennifer Willet, David Khang, Dr. Justin Powłowski, and Stelarc in October 2010 at Concordia University, Montreal.

Emergent Representations of Data

Through workshops, the project engages local geophysical expeditions and select sites for monitoring in tandem with bioremediation⁴⁰ techniques - instruments that accompany these expeditions have the capacity to test for specific parameters at different sites and communicate this data live through mobile applications - data is illustrated in emergent image-based animations versus representation of information only in numbers or text. For example, the application developed for water remediation featured a lily pad that grew an animated flower each cycle, illustrating duration, ripples in the water that illustrated pH, waves and debris in the water could be used with an oxygen sensor, and colour that was correlated to temperature. The animation used simple hand-drawn illustrations.

Creative Instruments

The project began with a prototype designed for water monitoring and remediation (using bio-filters and the farming of beneficial bacteria) during Medialab-Prados Interactivos?!10 workshop in June 2010, Madrid, Spain. The project continued to expand to additional sites: land, air, soil, architecture, animals, body where future exhibitions demonstrate the prototypes as well as symbiotic long-term ideas to move towards a healthier site specific to each case. The public workshops will include opportunities for intensive discussion, testing of prototypes, tutorials on simple programming of applications and hardware/sensors and hands-on remediation techniques such as planting specific vegetation in an area, filtering water with mushrooms, using a waterwheel to oxygenate a body of water. The long term goals of the project are to form an international working group that designs, prototypes and distributes the animated, networked objects and concepts through open source and various social media. These objects will consist of creative instruments that could be used for community activism, education and stewardship in regards to caring for and remediating local sites that have been disrupted or unbalanced.

⁴⁰ Bioremediation is the process of using biologicals to filter or remove toxins from a polluted or contaminated site. For example bacteria that breakdown and consume pollutants, fungi that serve as filters or plants that remove contaminants from the soil.

What kinds of sensory information can be translated into data?

In November 2010 the initial concept and documentation from the founding residency at the Neighborhood Science workshop was exhibited at the “Hack Space”, University of Toronto Art Centre, Toronto, Canada, during the DIY Citizenship conference (exhibited were images of the networked water sensor, bio-filter system, a water testing wearable for fieldwork with GPS). A wall drawing was installed in the gallery and visitors were asked to contribute their ideas to the question: “What would you like to *sense* in the landscape?” From over 100 suggestions collected, for example, rainbow sensors, animal pathway trackers or pollen detectors, a new series of designs were set into development resulting in a number of sensory concept for collecting or expressing *data*. In addition, the project asks us to consider the spectrum of information that can be considered data - from objective measurements (temperature, mass, number of particles) to more subjective and even



Image this page, next page, *Animated Landscapes* (2010–11) Sea-jellies

ephemeral types of information such as colour, behaviours and personal interpretation. We want to explore what data can be as well as diverse tactics to transform “data” into actions



using art, communication strategies, education, and remediation. The sensory instruments or systems will combine functional design with wonder, magic and playfulness to produce a range of concepts to engage with the physical (and conceptual) environment.

Engaging the Public, Engaging the Local Landscape

For the M.A.R.I.N residency my project focused on the design and use of a series of collection and mapping devices that focus on plant networks in relation to networking and electronic communications while simultaneously harvesting energy from plant matter to run basic electronics for the research and artistic inquiry. The collection of cartographic vegetal-specific data, including video, images, and samples, will be used later to develop an installation. One of the activities I will focus on is developing a mobile plant-tissue sculpture set-up and 3D scanner for taking samples of plants without removing them from their environment. These scans will be used to later render 3D prints of hybrid plant forms. I also want to think about the ecological issues in the Baltic Sea that are occurring due to excessive plant growth, oxygenation - what kind of intervention or visual data could draw attention to the problem?



Image this page to page 137, *Doughbie: Edible Companion* (2010).





Culinary Cultures of the Kinder/Garden, Doughbie (2010) “Culinary Cultures of the Kinder/ Garden” Latitude 53, Visualeyez, Edmonton, AB

In an aesthetic practice, navigating diverse kinships requires shifting authorship to multiple actants, or composing events so that the audience becomes a performer. This is a process of interpreting the act or situation as it is unfolding. An example of this kind of performance with a different kind of being was an impromptu, participatory performance titled *Doughbie, Edible Companion*, which was part of a larger installation, *Culinary Cultures of the Kinder/Garden*, a collaborative work with Alison Reiko Loader for Visualeyez Performance Art Festival at Latitude 53, in Edmonton in 2010. During the exhibition, improvised performative works unfolded casually each day with various living and edible beings, or phenomena often referred to as living cultures. *Doughbie* became a series of adoptable living bread doughs displayed on plinths, which came with wearable fabric slings. Visitors could adopt a doughbie by naming it and leaving its name-tag on the empty plinth. The adopter would put on the sling and carry the doughbie with them throughout the day, allowing the yeast-beings to rise and fall through the body heat of the parent. In the evening, doughbie could be divided, one portion baked and the other used to start a new doughbie the following day. Each adopter had their own, unique experience, after this point: some came back and discussed their time as a dough parent, while one adopter shared the baked loaf the following day. Apparently riding in public transit with a live

dough is somewhat uncomfortable, given the distinctly potent yeasty odour it emits. While perhaps not a realistic version of a companion-species relationship, the doughbie does emphasize domestic terms of care in reference to spending the day with a dough. The project uses humour to emphasize the estranged relations people may have even to very common beings so important to facilitating intimate relations, in food consumption and living trajectories, within the shared space of the home. The project also evokes other questions related to food production and traditional knowledge of baking bread using starter cultures such as sourdough. This link was articulated and echoed in further dialogue in relation to additional living cultures in the installation, such as yogurt bacteria, vinegar mothers, and plant chlorophyll. Closely linked with care for ecologies of habitats is the expansion of care for the self through the hands-on growth and preparation of edibles. This is another important element to consider when forming multi-species relations that begin to open up understanding with the intimate creatures that live together in domestic proximity with us. Learning to perceive differently requires close attention to beings as a continual reconfiguration in modes of being.



Image, *Culinary Cultures of the Kinder/Garden*(2010). Image next page, *Disco for Darwin* (2010).



Disco for Darwin, Concept for Artwork (2011-)

Disco for Darwin is a reinterpretation of Charles and Sir Francis Darwin's experiments with movement tracking in plants, a study of soundscape in local environments, and a performance that takes plants as co-choreography's (Darwin, *The Power of Movement in Plants*, 1880). Plants are always moving in a circular direction, a spiralling from the moment the cotyledon emerges from the seed. This movement was studied in depth by Darwin in the late nineteenth century through a series of analogue motion-tracking tools meant to analyze the movement and behaviours of various plant species. The physical movements of plants, for the most part, exists in a different time-space, one that is difficult to witness during regular human observation-time. To see the circumnutations of plants one must set up a technical apparatus to record their growth over long periods of human-time. Darwin used glass plates, a small bead fixed to the plant and ink to trace the growth of seedlings and the movement of plants prior to photographic time-lapse. For this artwork,

I replace the bead with a tiny LED light (I have a system developed from my work with wearables – the LED is 2mm - attached to conductive thread which may minimally effect the movement of the plants) and use digital time-lapse. The plant movement and time-lapse video will used with a Pure Data (Pd) patch to create an audio composition and will be used for projection into a space during live “dance parties”. A number of different audio recordings will be sourced from local sites of vegetal habitation. This can be loosely translated as sites where plants and trees are thriving such as gardens, orangeries, people’s homes who love plants, underwater, fields, forests. The traced movements could be choreographed given the transitions between points of the annotated growth of plants by observation, corporal interpretation, improvisation and relationship with the plants. The final stage of production would include a larger number of performers like in a flash mob or disco (The Hustle) tradition, where mass participation is encouraged. The transitions that link the points will flow so that the movements are easily accessible.

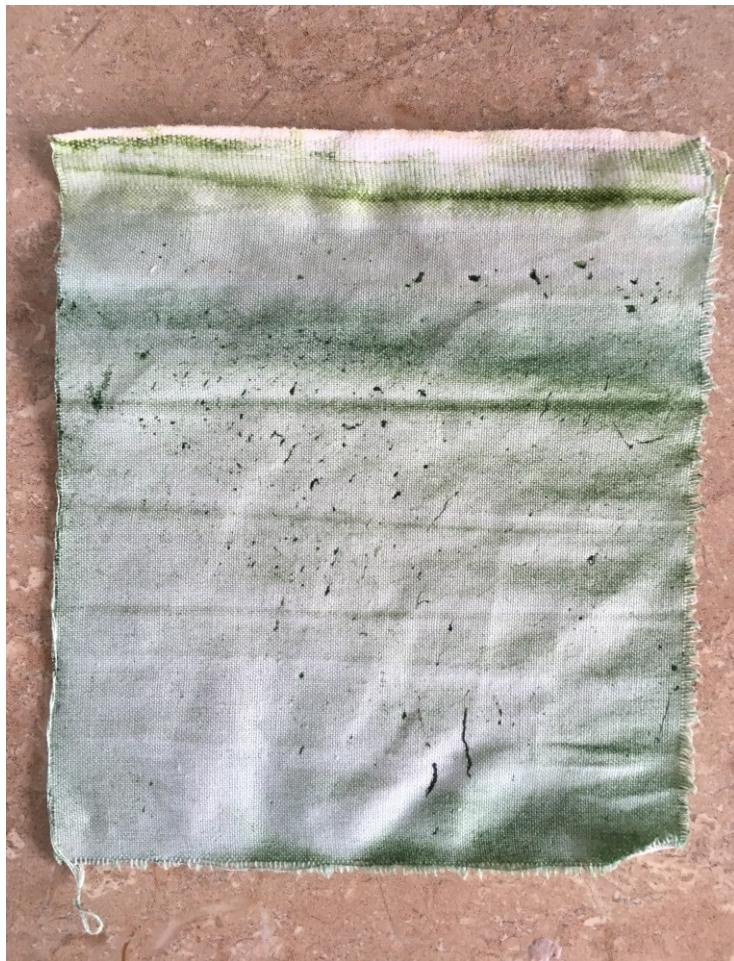


Image this page, next page, Spirulina dye on textile, studio (2017).



BETA-commons, project concept (2011)

Through both form and content, *BETA-commons* is an experimental space that depends on the participation of the public for both the maintenance of the installation as well the development of its output: the design, screen printing and display of an image-based vocabulary (maps, diagrams, symbols) to think anew possible articulations or more horizontal relationships between humans and more-than and the maintenance and development of common spaces within the community. *BETA-commons* is a testing ground, an exercise in imagining through symbolic representation, expanded nature-culture frameworks and different modes of production within communities. Through a series of weekend work sessions, visitors and participants will be asked to discuss and illustrate their ideas for new forms of community and activities that heighten the participation or awareness of more-than actors/actants that must be included in notions of the collective. An installation will be developed using repurposed materials, a number of tiered shelves branch out alike temporary scaffolding. Upon the shelves are rapid-growing grasses (wheat grass) configured to resemble dense agrarian growing techniques like terracing. The sculpture produces a raw product in the form of grass (grows a few inches per day) which is then processed into liquid chlorophyll to be used as dye in the design/printing area of the installation located inside the gallery. Liquid chlorophyll is intensely bright green in colour and stains almost everything it comes into contact with. Anyone (ie. the audience) can work in the installation for a few moments as there are many tasks; watering, harvesting,

grinding the grass with the hand crank operated press, preparing screens, and most importantly participation in the creation of the BETA-Set. The BETA-Set is the semi-semiotic output of the installation. Through a collaborative process, visitors are encouraged to contribute to the development of a series of designs to be individually printed onto a piece of textile - 20" squares. The prints will be displayed as a large textile.

Plants and People Project (2011) “Plants & People Project”, Anniversary Party, Eastern Bloc, Montréal, QC

This installation was centered on performative fieldwork, where archiving and sampling presents a hybridization, a troubling of methods emerging from trajectories of thought such as eighteenth-century natural philosophy in the exploration of landscapes and classification of phenomena. The archives in the *Plants and People Project* were not named or organized in a linear or hierarchical fashion. Names for the samples collected were subjective and attributed to relations based on place. The wet-lab wasn't really that sterile, and the equipment used was an eclectic assortment of glassware from a local thrift store. The PPP's pedagogical activities included performative tours that documented the trajectories of plants and peoples from earthly locations to outer space in a speculative manner via collage using growing tissues, work with 3D printing, and chlorophyll as a communicative medium. Building casual or haphazard tissue collections is an ethical grey zone; however, such semi-chaotic collections stave off order and labels, and contain bizarre grafts of not-yet-knownable things that resist classification systems.³⁷ The clone becomes a strange and



subversive figure when outside of an institutional laboratory, and the sampling of abject tissues appears somewhat out of place in an art gallery. The *domesticated people* that participate in the work have the opportunity to self-reflect on such a position or label that has been placed on them: Am I domestic? How did I become so? How am I involved in the act of domesticating or controlling other beings? The *researchers* involved in the project conduct site-specific sampling where they essentially grew an iteration of the PPP on site to be prepared and then incorporated into the archive. The research team included my son Benjamin Andres (b. 2001) and myself. The project was carried out over a couple of weeks, beginning with setting up stationary micro-propagation station, light tables for the tissue display, and an incubator for the living plants and artifacts to be archived.

Improvised researchers—the visitors to the gallery—could voluntarily fill the installation space with *data* based on site visits, fieldwork, and interactions. The archive consisted of a haphazardly constructed grow room composed of vegetal samples, along with visualizations of the gallery visitors who were related to these samples in one way or another. A video documented the resulting archive, and provided a wider contextualization for the *Plants & People Project*, situating the processes involved in formulating this somewhat paradoxical concept: a living, alive archive. An archive holds an assortment of things as artefacts in a particular context to display or preserve, along with an account. The objects are framed within a narrative, they are spoken for or represented by a set voice in a specific tone. On reflection, in future iterations of the *Plants and People Project*, it will be

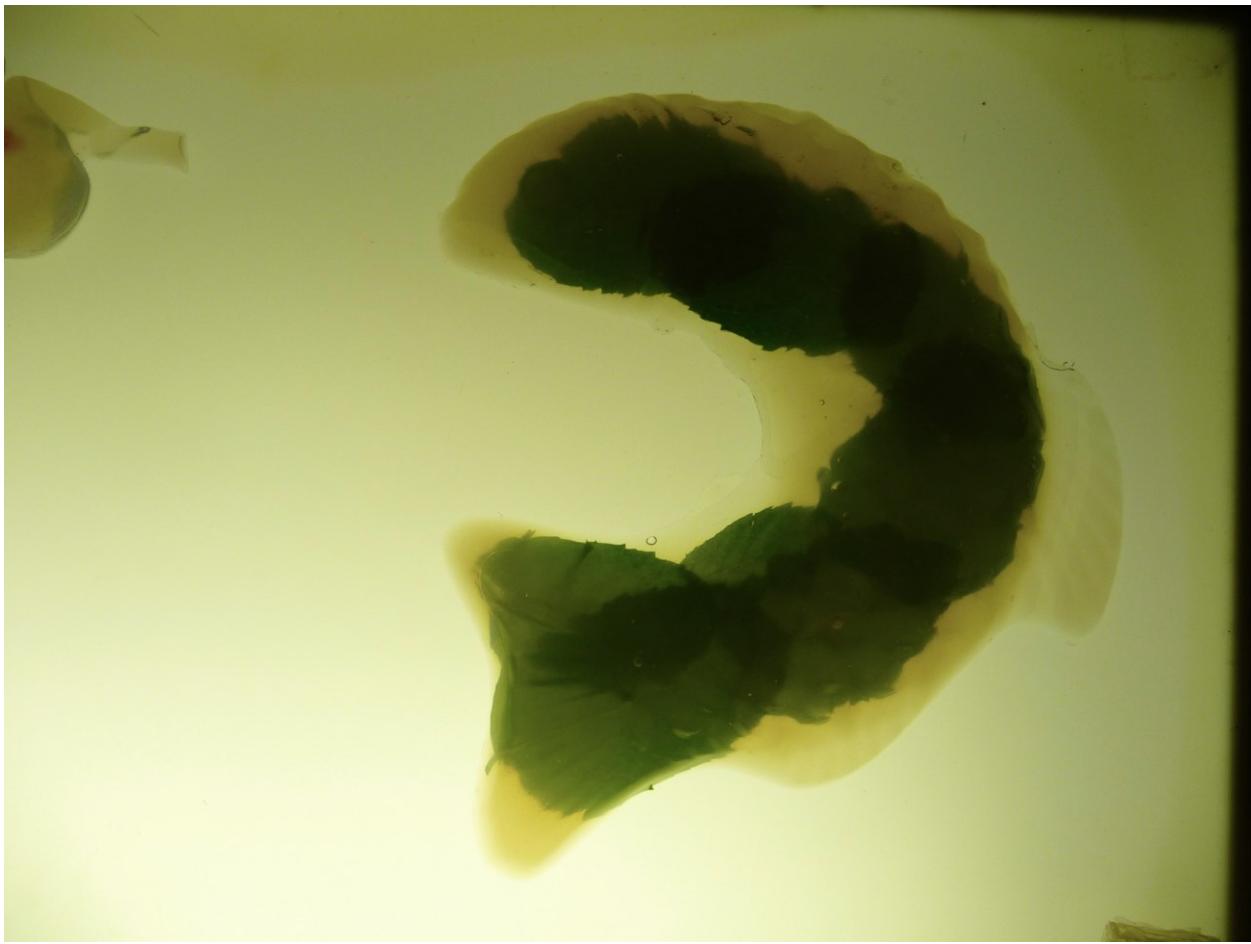
interesting to go more deeply into the networks of connections to question how these specific plants and people came to exist here together. What do sites for propagation look like, and how might such sites be troubled through a speculative aesthetic approach? How does the transfer of a range of diverse living phenomena act within global economic networks? Why are houseplants at once completely normalized and super-strange in their potted existences, a relation that is very different from a grounded existence.



Allopolyploidy: The Work of Art in the Age of Genetic Modification, Concept & Proposal (2011) A four part research and production project:

1. Collection of specimens - research, fieldwork, creation of hybrid narratives and objects
2. Experiment with 3D modelling and printing - transformation through media and forms - physical object into 3D to 2D to physical object
3. Performance and experimentation
4. Research and development of text, website and supporting information

Numerous plant specimens are collected and digitally scanned using a 3D scanner (domestic, urban, rural specimens that can be scanned live or have already fallen from the plant or tree - care will be taken). The plants are digitally grafted or modelled to develop approximately ten designs that are proposals for potential new hybrids - combinations that are or have been



thus far biologically impossible. Through speculative narratives developed for each “imagined” plant hybrid, thematic related to different collective issues may arise; colonization and immigration, domestication, bioengineering, and human/more-than human relations. The project also consists of a performative element where I conduct plant tissue propagation. After consultation with a horticulturalist, some of the plants will be reproduced (cloned) in editions to be exhibited as individual artworks along with 3D hybrid sculptures in plastic. (Only 1” square of tissue is needed - this can be taken from a plant or tree without damage due to their cellular structure). The plants that are conceptually linked as fictional hybrids will be propagated in the same sterile container - usually just one plant of one type would be in each container. Video documentation and time-lapse would be used to record the performance and the growth of the tissue cultures (or bacteria and decay if they are contaminated). My guess is that there will be a significant difference between the rapid prototyped sculptures and the plant tissue hybrids and it is this overlap or the relationship between the imagined, the speculative, the subjective, the “experiment” and the sensitive nature of working with living beings that I want to explore. The human-plant relationship

has evolved dramatically over the past few centuries: Historically, in our co-migrations across continents, through domestication, cultivation, and selective breeding practices and currently with manipulation at the level of the cellular or molecular. Such alterations are accompanied by the demand for hybrid varieties modified to resist disease, grow in harsh climates and produce larger or more uniform plants and fruit. I cut-out all of the hybrid plant varieties from a seed catalogue: about half of the vegetables in the catalogue are labelled as hybrid. This means they cannot reproduce their genes in offspring. The hybrid is meant to only last one growing season. I find this both intriguing in terms of an ephemeral and unstable organisms and troubling in regards to cultivating sustainable practices in food production. Many of these new hybrid plants exist as commercial entities, are actually owned by corporations as a form of capital, most are patented as a way of controlling reproduction. There is also a vagueness that surrounds the commercial agri/horticulture industry in North America in regards to hybrids and genetically modified organisms (GMOs). Currently, GMOs do not need to be labeled as such for consumer consumption and the hybrid is almost elevated as kind of super-plant genetically constructed to perform beyond other non-engineered species : *grows faster, grows in northern climate, resists insects, fungus and other plant diseases, new purple color, glows in the dark...*

The proposed project combines digital and biological reproduction to echo complex symbiotic relationships at work between species Plantae and Anamalia. The work has a fragility not to be overshadowed by the “scientific” techniques performed, as the process of performing the tissue culture, is alike many of the techniques used in the visual and media arts. I am thinking specifically of collage, appropriation, dark room processed photography and film. The procedure is fairly simple and there are many how-to guides within DIY online forums. The samples are selected, cut, sterilized and placed in a growth medium inside an airtight container. The sealed vessels are placed in sufficient light to grow. When the cuttings grow enough root matter, they can be released from their sterile environments. Most of the plants that are sold to the general public in stores and nurseries are propagated using plant tissue culture.

The 3D design process presents a hybridization of methods and histories such as 18th century natural philosophy in the exploration of landscapes and classification of organisms. Or from

Baroque and Victorian decorative design where plants are excessively stylized, flattened and reproduced into patterns for use in domestic spaces. Recently, (bio) artists have performed modifications of living organisms such as chickens, butterflies, and tissue cells for the sole purpose of aesthetics. I wonder what future landscapes will look like and how inter-species relations will be negotiated? How should individuals contemplate the agricultural industry's approach to modifying plants with solely economic motivations? Should there be more emphasis on reverse-breeding to try and bring back heirloom varieties (that are often hard to grow due to low tolerance to weather, disease and pests) or should more people embrace a kind of DIY biology where they set up fish-tank-pressure-cooker laboratories in their homes to make their own “clones” and other new hybrid organisms? What other questions need to be asked at this time? In addition to potential exhibition opportunities in the future, the work could have an interactive website component that could engage a larger audience where the website would hold the 3D sketches of the hybrids and perform a kind of random hybridization of imagery plus would contain text from various research. I am interested in the idea of a new kind of citizen science where individuals create another layer of knowledge regarding their communities especially when combined with dynamic infrastructure such as an online environment. If I were to imagine an installation of the work it would consist of: a diagram system for the develop of the “hybrids”, 2D wall installation-a light table with about 100 tissue culture containers with the plants inside-on the walls, about 10 2D photographs of modeled 3D hybrids, on a small shelf below the 3D plastic sculptures of the printed models-video of performance, time-lapse of growth-workshop for public on making 3D hybrids, local ecology, biological and art.



Image, Workshop with caterpillars (2011), Concordia University.

Wundergarden: A Hybrid Gallery (2011)

Wundergarden was a physical installation that consisted of a series of modular frames intended to accompany the dissemination of projects engaged with the visual arts, the living sciences, and multi-species creatures. In this work, I focused on diverse creatures and hybrid spaces to expand sensory knowledge into unfamiliar forms, while also thinking of interventions relating to a performing of public sites. The Wundergarden project emerged through a conversation between myself and my directed study supervisor, Professor Tagny Duff (Communication Studies; director of Fluxmedia), following a meeting with Dr. Emma Despland and her graduate student Kalyani Rajalingham (Biology). I was invited to this meeting by Dr. Duff to discuss a possible art and science collaboration with Dr. Despland involving the hybrid trees that were being used in the scientists' experiments. Our initial conversations were based on exploring possibilities for interaction and for animating some

of the sensorial aspects that could be invoked through human-based encounters with the trees. This conversation sparked an idea, which was subsequently informed by current artistic practices invested in working with living materials and interdisciplinary collaboration, and for opening these concepts to a larger audience. As we left our first meeting, I thought about creating a space or a site that was conducive to hybrid explorations, experimentation, and artistic dissemination on the campus. This site might potentially blend a number of activities, and, through its location in public space, in an open environment—a courtyard between departments, the Science building and the Communication Studies and Journalism building. This site could draw together individuals from different sectors of the community, both on campus and off. The result, four months after the initial meeting, was the first exhibition installed within the newly constructed Wundergarden Gallery, titled *Olfactory Map of populus* (2011–12). The project was supported by a grant through the Concordia University Small Grants Program, which paid for the materials, as well as artist fees for jenna dawn mclellan (design and construction of the structure) and Claire Kenway (DJ for the opening event). The installation consisted of six different species of hybrid poplar trees left over from the experiments conducted by Dr. Despland and her graduate students in the biology department throughout the summer of 2011. This biological study collected the leaves from more than one hundred container-bound trees, ranging from approximately two to ten feet in height, whose leaves were harvested as feed for tent caterpillars within a laboratory environment. The biologists were studying which hybrid tree varieties were more resistant to caterpillars, the results to be used for selective breeding of more resistant tree species. The partnership between myself, Fluxmedia, and the Despland Biology Laboratory was initiated to work toward making both projects, the Wundergarden Gallery and the biological study, more visible to the university and surrounding communities—in particular a public workshop held in spring 2011, and a public event in the Wundergarden held September 30, 2011.

Additionally, these projects acted to initiate a long-term relationship between Fluxmedia and the Despland Laboratory, which involved researchers from various Concordia departments, including Studio Arts, Communications, Design and Media Arts, and Biology. By engaging in these initial projects, a working relationship between participants could be

established, as well as a site-specific engagement with an under-utilized social space on the Communication Studies and Journalism building patio. The patio occupies one side of a central courtyard, while the Science building, built on a terrace overlooking the courtyard, borders two sides. The main goal of the initial partnership was to find a temporary location for the potted trees, so that the scientists could access them easily during their study, and to provide an opportunity to introduce a non-scientific public to the work and materials of an in-progress biology experiment.



Image, *Olfactory Map of populus* (2011), Concordia University.

As the idea of the Wundergarden was to act as a site to explore concepts related to vegetal beings, as well as a hybrid gallery that could, at times, act as a living laboratory, its first installation, *Olfactory Map of Populus*, seemed a suitable attempt to test this framework. The inclusion of the trees from the experiment in the artistic concept could expand on some of

the scientists' methods, such as the selection of leaves, sensitivity to the subtle differences in the trees, heightened observation skills, and a knowledge of the chemical qualities of the plants. The artistic concept also sought to provide a departure from the quantitative activities required for a scientific study, and open it into a more ephemeral form of subjective mapping, an olfactory cartography based on plant expression. The installation allows visitors to conceptually map out the subtle differences in scent of the six different hybrid poplar species, and invites them to consider their preference by identifying differences between the trees. This selection parallels the biologists' work with caterpillars, in particular the study of the insects' preferences with respect to different leaves. The installation introduces visitors to the scientific research through a sensory-based installation and interaction with the living trees. Locating the gallery outdoors, in an intermediary location, provides an open and inclusive site. Unlike a traditional art gallery, which exerts a great deal of energy trying to maintain a closed, controlled environment void of unwanted creatures and entities (dust, rodents, insects, mold), a gallery set outside of a human-architectural structure invites the participation of such visitors. The actual gallery consists of a series of modular, mobile frames meant to act like the white walls and benches of a traditional gallery—transformable, but also serving as a placeholder, a stage or frame to situate or present artistic works made through collaborations with scientists to the public. Through the use of a series of frames, the gallery does echo a modern architectural form. This is intentional as the Wundergarden is located not as an alternative or in complete opposition to a traditional art gallery, but as a proposition or extension, extending the possibilities of situating the vegetal beings as artistic propositions, but framing them within an extended locality, with additional participants and modes of dissemination. The modular structures are also meant to act as a form of furniture, which Elizabeth Grosz defines as a primary human territory: Furniture is what touches or is most intimate to the human body, and is thus connected to architecture, and then to the earth itself (Grosz, 2005). The use of the frame-like structures in the space, and the design of the forms, was based on the decision to try to bring the human body closer to the multi-species beings and materials within or around the structures. By conceptualizing the gallery structures and the gallery site itself as a social space, and by introducing additional structures for social activities, the project introduces the idea of passive perceptual interaction with the art-plants-creatures situated within the space. In so doing, it moves toward Elizabeth Grosz's

idea that, “art emerges when sensation can detach itself and gain an autonomy from its creator and its perceiver, when something of the chaos from which it is drawn can breath and have a life of its own” (Grosz 2005, 7). At once, the project exhibits a diverse range of design considerations, such as incorporating the existing architectural design—a mostly human territory of the adjacent buildings, the local urban and landscape architecture, multi-species places—toward an idea of different relations by creatures’ interventions into the gallery site.

The Wundergarden is an intertwining of two concepts: the *Wunderkammern* of the sixteenth and seventeenth centuries, and the garden—borrowing philosopher Edward Casey’s definition of the garden as an intermediate architecture, or monument of sorts, located somewhere between the domestic dwelling and the wild. It is an uneasy boundary, as it serves to hold artificiality and naturalness apart, and yet, at the same time, a garden acts to bring these dualities together in revealing ways (Casey 2009, 153–58).

Wunderkammern translates (from the German) into “chamber of wonders,” or “wonder-room,” and was a cabinet or room intended for the display of collections of artificial and natural artifacts. In *Wonders of Art and Wonders of Nature*, Lorraine Daston and Katherine Parks discuss how these collections contained an assortment of oddities and artifacts, such as ornately decorated unicorn horns, automata, and ethnographic objects, which acted to blur definitions between what was considered a wonder of art and a wonder of nature, as, “despite wide divergences in who collected what and why, almost every modern Wunderkammern in some way perfectly exploited the peculiarly intense wonder of crosses between art and nature” (Daston and Park 2001, 260). Daston and Park’s text illustrates how the *Wunderkammern*, and the activities that accompanied the objects accumulated and displayed, were places where oppositions between art and nature first blurred and then dissolved into natural philosophy, the precursor to modern science. The *Wunderkammern* acted to invoke questions, in the early seventeenth century, surrounding what was a work of art what was a work of nature. These questions acted to undermine an ontology that placed art and nature in opposition, and also played a role in the emergence of cultures of wonder, in which theatre for the display of art and nature played off of one another.

⁴¹ Here the word is in the plural (i.e., with a final “n”). The singular is *Wunderkammer*.

Tender Curating

One of the domestic living systems I have been thinking about for the last few years is the garden and gardening as a form of “tender curating” that expands perception. Growing and caring for plants involves adapting oneself to different forms of duration, seasonal variations, and perceptual shifts to learn, with the aid of a bit of anthropomorphism, to recognize and trace characteristics only comprehensible through such interactions with unfamiliar beings. These practices unfolded from the care and observations of the scientists in Dr. Despland’s lab—for one example, master’s student Kalyani Rajalingham, who continued to care for the trees even after her experiment had ended. Often in a scientific study, the (more-than human) subjects of the experiment are culled, or disposed of. However, due to the prospect of exhibiting the trees in the fall, Rajalingham continued to care for the trees, which was out of the scope of her duty.

In June, we co-hosted a public workshop with the Despland Laboratory to introduce participants to some aspects of the scientists’ work with the caterpillars, moths, and trees. It was, in part, a small-scale gastronomical event in which the caterpillars were introduced to a buffet of leaves picked by participants from the trees in the courtyard, where the insects selectively gobbled some and not others. Or where the scraggly corpse of a moth became revealed, under the microscope, as a creature covered in gold dust—somewhat, I imagine, like one of the gold-plated anomalies once treasured in a *Wunderkammer* collection. Or when Dr. Despland, exhaling slightly, animated the leaves of a branch into a dancing array of green, flickering light and shadow. The members of her audience would always be able, from this point forward, to identify a trembling aspen. But perhaps the most memorable and mesmerizing performance occurred when Dr. Despland’s postdoctoral student, Dr. Darragh Ennis, carefully syringed a synthetic pheromone onto a sheet of looseleaf, initiating a parade of synchronized caterpillar marchers following one another around in the shape of a rectangle.

Olfactory Map of Populus was an artwork formed from the residue of the Despland Lab’s summer experiments. These were the remaining subjects, the trees in pots, which, at the time of the opening, were nearing the phase when they would enter their winter dormancy (they would not live long if not planted in the earth). They were, at one point, the key

variable that immersed the caterpillars in the act of selecting a preferred poplar variety. When this text was initially written, the leaves were turning yellow and falling, soon to be swept across the cement patio and into the university courtyard. One must wait another season for new leaves to emerge, a notion that is somewhat foreign in the realm of artistic dissemination, where the work is usually always on, or can be turned on and off depending on the gallery's hours of operation. The artwork is ready and awaiting the viewer, and frozen, somewhat, in a specific location for the articulation of a set of particular sensations or a point of conceptualization. In *Olfactory Map of Populus*, while visitors were welcome to test their perceptual abilities of selection and recognition during the opening event, the work will be at its height, or most developed, next spring when new leaves emerge and their delicate differences in scent can be traced. The attractive—the aesthetic as lure—will be consumed both by humans and the diverse insects that happen by. Initially, when the idea of creating a map of scent amongst the trees was conceived, the approaching fall season seemed threatening, as though the weather would ruin the show. But the weather, the elements, and the cycles of growth and decomposition that are formed at the site of a garden, are important elements to consider in the design of exhibitions in order to follow through with the mandate of bringing together living materials and artistic concepts within such an intermediate architecture (Casey 2009).

Garden

The garden is a site of rich symbolic subject material as the vegetal is intimately integrated into the lives of humans. Immersed in various forms of plant matter at all times, it is possible to consume, wear, inhabit, and enact something of the vegetal at almost any given moment. Human beings' existence and dependence on plant life has been articulated in many configurations and the garden acts as a form of heightened testimony to this relationship. Specific gardens also act as a reflection of a particular community at a particular time in history. Philosopher Edward S. Casey's text *Building Sites and Cultivating Places* provides an illustrative history and overview of the cultivated garden site in relation to architecture and place (Casey 2009, 146–81). He writes that the garden is a halfway station and also a primary form of landscape architecture, with a long history of formal design, which was at times considered more significant than residences, symbolically representing a kind of paradise on earth, as well as an extension of

architecture. For as long as humans have lived sedentary lifestyles, they have developed and cultivated sites for working with plants. The curatorial vision of the Wundergarden was to support projects, events, and experiments that explore both a widening of human perception and activate possibilities for multi-species encounters by embracing alternative durations, such as those required for growth, seasonal variation, and thoughtful, quiet encounters. The project takes on some of the historical parameters of both artistic and scientific practices, in that it adopts elements of each. It can be something of an exhibition space, an outdoor site for fieldwork, a garden, or a part of the architecture. One way to open into new modes of thinking and understanding is through interdisciplinary research and collaborations across separate fields of study and knowledge. This was the initial position for the Wundergarden project where, through developing inclusive parameters between art, vegetal beings, and the living sciences, there could be potential for events or acts to emerge that are indefinable and that resist disciplinary definitions

The inclusion of vegetal beings as a subject in modern Western art emerged around the 1960s with the “land art” movement in North America, as well as the expansion of practices in conceptual, performance, and installation art projects, such as Hans Haacke’s *Grass Grows* (1966),⁴² Alan Sonfist’s *Time Landscape: Greenwich Village* (1965/1978–), Agnes Denes’s, *Wheatfield: A Confrontation* (1982), and Mel Chin’s (with Dr. Rufus Chaney) *Revival Field* (1990–93). These projects were created amidst a burgeoning concern for the environment and the creatures affected by modern endeavors, along with the residues of intense industrial revolution in both Western Europe and North America (Andrews 2006). Generally, prior to this, vegetal beings in an artistic context were articulated as representations, not as agents or as parts of dynamic systems. Art that depicted representations of vegetal beings occupied a lower position on the formal genre hierarchy, especially in the tradition of painting (still life and landscape painting), or was positioned as craft or hobby work with botanical illustration and floral arrangements. This negated location stems from the initial representation of a variety of plant life through

⁴² Haake was interested in the “interdependency of biological systems and nature. Haake was one of the first contemporary artists, along with Joseph Beuys, Helen Mayer Harrison, Newton Harrison, and Alan Sonfist, to examine social ecological issues through art in the United States. *Grass Grows* was exhibited at a Manhattan Gallery in 1966 and again at the Cornell University museum in 1969. *Grass Grows* highlighted physical and biological processes of change, renewal, and decay. Haake planted and grew green sod on bare dirt in the exhibition space. He believed art had become linked to ‘mythical time,’ a concept that separated art from real life events. He was determined to create art that existed in ‘real time,’ with life-centered issues, e.g., politics, economic systems, ecology, industry, and other everyday life experiences and activities.” Don Krug and Jennifer Siegenthaler, “Changing Views About Art and the Earth,” <http://greenmuseum.org/c/aen/Earth/Changing/artist.php>.

Linnaean systems of taxonomy and classification in the form of illustration, which developed from about the mid-sixteenth century for documenting plants in the study of natural philosophy, accompanied by a mindset that views the human as the dominant species. As artistic techniques advanced, such as the mastery of printing methods and illustration for botanical renderings, the plant as art was subsequently absorbed into the decorative arts—for furniture, ceramics, and interior design—or represented in still life painting as allegorical symbolism (Daston and Galison 2007, 55–113).

Beyond artistic and scientific engagements with vegetal beings, there was also the role of the cultivator. The cultivator, either as a farmer, horticulturalist, or hobbyist, was the individual who worked to selectively breed, transport (import/export), and experiment with plants in both outdoor environments and in architectural forms such as the *orangerie* (glasshouse or greenhouse). The work of cultivators was of a sort in which a “mastery” of selection and observation became essential in regard to understanding the plants’ reproductive systems and creating artificial conditions in which they could be grown and sustained (Friedman 1979, 19–28).

It is helpful to reflect on the historical development of the activities that have constituted human-vegetal relations when positioning the plant in a contemporary art context, as the artist’s, scientist’s, and cultivator’s activities were conjoined in the formation of the plant as a subject in a colonial context. In terms of bridging these trajectories, a juxtaposition between nature, natural philosophy, and what was understood as artificial can, in one historical account, be traced to *Wunderkammer* collections, wherein artisans and natural philosophers used different materials drawn from both the environment and the studio, creating collisions between found artifacts and human-made materials to make sculptural objects, as well as creative narratives to accompany those objects (Daston and Park 2001, 255–301). The *Wunderkammern* have been influential for artists for many decades, and these archaic nature/culture sculptures and collections perhaps may be viewed as the predecessors of artworks by contemporary artists who work with living materials, such as plants, in hybrid sculpture and multimedia installation. For example, artists like Mark Dion, who has worked under the guise of scientific display to construct diorama-like rooms and installations filled with collections of objects derived from institutional and “natural” environments, such as *Vivarium* (2002), or *Rescue Archaeology, A Project for The Museum of Modern Art* (2005) installed at MoMA in New York. Phoebe Washburn creates enormous installations, which are, as the artist calls them, somewhat stupid,

chaotic, semi-living systems without a useful function, but operating with a set of rules that binds the artist to a particular process. Washburn's huge sculptures are in part constructed from mounds of discarded refuse taken from the streets of New York—works such as *Regulated Fool's Milk Meadow* (2007) and *Nunderwater Nort Lab* (2011). Natalie Jeremijenko is both an engineer and an artist who works in a variety of media and often invites creatures to participate, in a sociopolitical context or through performative gestures, in projects like *OOZs* (2003–), *Urban Space Station* (2008), and *Farmacy* (2011). Somewhat like late Renaissance artisans who created objects for the *Wunderkammern*, the above artists contribute critical discourse on a reoccurring thematic—exploring representations of the binary relationship between the material inhuman that accompanies the human—as well as the theological-hierarchical systems for placing living beings into natural-synthetic dualisms, and interdisciplinary practices.

Over hundreds of years of dialogue and material experimentation, artists are still immersed in questions surrounding the relationship between the human, the natural, and *other natures*, that consist of environments and objects produced through human activity. The notion of surpassing imagined boundaries between the synthetic and living—or, in terms of a discourse, the biological—is often a central thematic in many of these investigations. In contemporary artworks, plants more often than not participate as living actants, or as a part of an assemblage or a sensorium, to illuminate unseen processes providing the human audience with uncertainty regarding the kinds of multi-species relationships humans build through conceptual parameters, sensory stimuli, techno- or bio-scientific effects, or aesthetic renderings. As these works are increasingly complex, it is necessary to enjoin discussions, such as those from feminist or post-humanist frameworks, as some of the theorists in these fields emphasize a movement away from the placement of the more-than human outside of the human. Rethinking categories of the past to make room for discourse that includes various co-minglings, partially living phenomena or even speculative chimeric hybrids, takes time and experimentation with relations. By incorporating plants within the context of an artwork, the affect associated with the living material can reflect concepts that relate to expanded ways of perceiving and being in different relations. In artworks such as Washburn's, Jeremijenko's, and Dion's, there is great potential for openings to understand how to become more intimate with the perceived inanimate, where beings or vegetal life may access a shift toward experiencing another

perspective—even momentarily.



Image, *The Committee: Propopopo* (2013), Halifax Community Garden.

The Committee (2013) “Propopopo” FIELDWORK, curated by Wes Johnston, Dalhousie Art Gallery, Halifax, NS

In this site-specific work, questions of potential intervention, forms of knowledge, and the diversity of alliances that might be made visible in a physical location over a set duration are enacted. By tracing out of a matrix of interactions and interruptions, the work suggests a different kind of site-analysis: one that moves toward a drawing-up of liaisons within an urban context, but is at best speculative, fleeting, ephemeral. By using the model of a public art consultation process and playing with the idea of a participant beyond the human—an expanded definition of the actors that come into or around—an idea emerges

of what constitutes a commons. What kinds of fractures are possible when opening research methods and institutional processes to forms of artistic interpretation? What relationships can be acknowledged within a particular site and how do encounters at this site become more than transitory or seemingly insignificant? How can a physical site serve as a kind of proposition in order to seduce, shape, and channel a complex array of living beings and matter while in dialogue with emergent structures, the negotiation of authorship, and both the benefits and obstacles inherent in collaborative practices?

The Site Analysis. Over one to two weeks, I document phenomena that permeate a delineated boundary around a designated centre. This collecting will take the form of visual documentation and data amassing (photography, video, drawing, mapping, time-lapse photography, interviews, counts, bacteria swabbing, actor-networks) to consider the interactions, behaviours, and movements of inhabitants and things.

The Public Consultation. The results of the fieldwork will be presented at a public forum, as well as in a number of preliminary sketches, studies, and maquettes, suggesting possible public art forms that consider the entities occupying the site and invite other actants who are absent but whose presence may initiate interesting interactions.

The Committee. At this point, the artwork will be designed in consultation with a volunteer committee consisting of various community members: human and more-than-human. If a mutually acceptable project can be articulated, one that fits the requirements of all parties, it could be physically constructed on-site. However, if the committee cannot reach an agreement regarding the design, the final work would exist as another form—for example, a video detailing the committee's decision-making process, interactions from the design meetings, audience reactions during the public consultation, and other documents that expose the project's processes and social infrastructure.

PROPOPOPROPO. Temporary Project Space for the Production of Propositions, Ponderings, Process, Proposals, & Potential Projects Related to the Common Roots Urban Farm Site, 2013. Halifax, Fieldwork Residency, Dalhousie Art Gallery.

A temporary installation/design studio to facilitate the generation of proposals for

concepts, artworks, actions, structures and other initiatives for the Halifax Common Roots Urban Farm (CRUF). The final structure was a semi-open undefined building (with a greenroof and solar oven) for the community farmers to appropriate as need arises.

Through this site-specific work, I wanted to engage questions of potential intervention, forms of knowledge, and the diversity of alliances that could be made visible in a physical location over a set duration. By tracing out of a matrix of interactions and interruptions, the work suggests a different kind of site-analysis as one that moves towards a drawing up of liaisons within an urban context, yet one that is at best speculative, fleeting or ephemeral.

Materializing the Sublime, Residency (2013-) Dizziness of Correspondences, The Banff Centre for the Arts, Banff, Canada

Materializing the Sublime explores how the materialization of a nonmaterial substance or event can be transformed through a series of processes that include translation, revision, and reconstruction. The act of transforming something nonmaterial, such as sound into an object, serves partially as an imaginative gesture, where the notion of capturing the momentary, the fleeting, the transitory, is always open to subjective interpretation. How are objects construed as materialized sound or echo waves? Artists and composers have often used translation of subjective or ephemeral states, such as emotions or environmental events, to form parts of their creative processes or productions. In this project, I visit sites that are significant, places of spectacle, or spaces that have a particular feeling. This is at once a personal and subjective activity, as well as one that draws on the notion of placemaking as a starting point. Placemaking is a holistic form of site analysis that situates multiple cultural, social, and historical sources to understand how to situate a new project in a community. This multifaceted, subjective query of what makes a site significant for diverse groups can open into a range of perspectives in thinking about site-specific relationships to a place. As a starting point, I consider different factors that may be gathered while locating a soundmark, and documenting the physical location with panoramic video.⁴³ Involving site visits and an audio/video collection, I listen to the recordings while drawing inside a panoramic cylinder, an intuitive process of drawing-

⁴³ Soundmark: a unique but recognizable sound from a specific site, analogous to a landmark. The term may be attributed to R. Murray Schafer's *The Tuning of The World* (1977), a text based on the author's research in Acoustic Ecology. The soundmark can be further divided into sub-sections, based on the type of sound: geophony (earth/mineral/rock), biophony (plants/animals), or anthrophony (human).

feeling for translating sound into material constraints to be produced via 3D rendering using x, y, z axis notation. Each site will have its own score: a drawing combined with G-Code programming. This notation is designed according to the experience of visiting the site, and considers the multiple layers of sound that can be actualized at a physical place. From the score and the collected audio, each site is further materialized, through its unique x, y, z scaffold, as a 3D print. This scaffolding is used to grow various salt crystals in a sound chamber with the specific soundmark recording (for example: “Himalayan salt formation for composition” or “audible glacier-in-motion, near Banff, Alberta.”⁴⁴ The scaffolding is printed in a conductive filament and used as part of a conduit or circuit to generate another drawing or sculptural interpretation. The idea is to *draw out* connections between widely dispersed matter through immaterial phenomena, thus highlighting the *non-space*, the idea that there is no space between objects—just phenomena not well perceived, which connect with objects as affects.

Such exercises can aid in the discovery of methods and tools for thinking with aesthetic concepts. Moving through different processes, the act of notation, and a mediation of concepts and matter through one phase into another, can expose certain qualities. A process of sedimentation and stratification is used in this material-conceptual frame to portray patterns to expand relationships between place, body, matter, and the non-space between things. *What is the space between things?* Salts from different places, seas and mountains juxtaposed into sound waves from different sites—glaciers, ancient sea beds—what forms will emerge? What can this series of acts portray? How does something that is perceived as non-material enact material configurations in the world? What purpose does this series of mediating processes enact actually or metaphorically?

The Chladni plate demonstrations were part of the development, by Ernst Florens Friedrich Chladni (1756–1827), of an acoustical theory of sound waves. Chladni’s experiments emphasized visual vibrational patterns using grains of sand or salt on a flat surface amplified with acoustic tones. As described in his 1787 work *Discoveries in the Theory of Sound*, this is a form of mediation to manifest qualities that human senses cannot completely perceive or tune into in one mode (auditory) in a visual sensory mode. Forming notions based on sensory semiotics explores overlapping qualities of matter and the senses.

⁴⁴ The work will be exhibited with a panoramic video of all the sites, the sound chambers, and the drawings. What does this “capture” enact?

For example, immersing the body in a cylindrical chamber will re-articulate an internally contained repercussion, a bounded interpretation of sound like that of a skull, where the cylinder is directional, while viewing with panoramic photography forms an extended prosthetic vision. What happens when my surround is expanded into multiple dimensions—or if my vision was 360 degrees or more at all times? Metamorphic or chimeric practices, practices that blend and merge, that move through concepts and material as perpetual motion, consider the way energy expresses polarity or forces through phenomena. Collaborating with matter in free play and improvisation meshes patterns that surround phenomena, creating unexpected stories for thinking with problems and concepts.

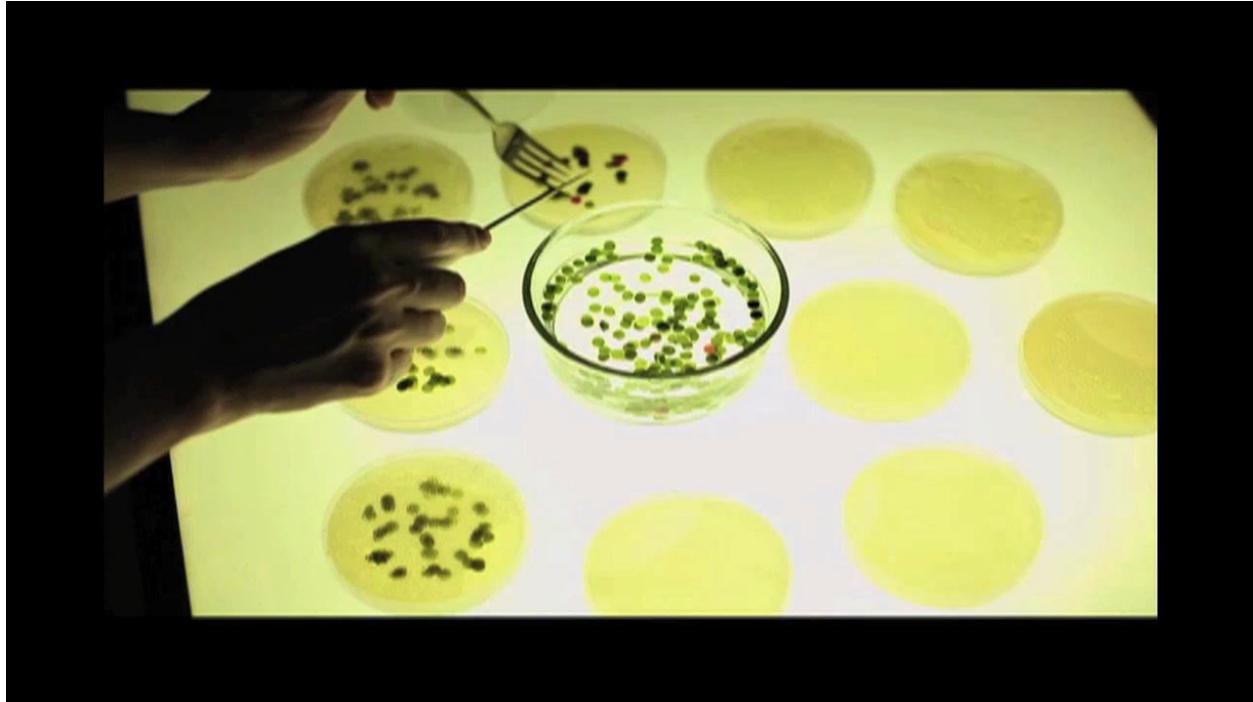
In Search of the QR_ebra PLant, Residency Project (2013) “In Search of the Qr_ebra Plant”, Video Screening, DAIMON, Gatineau, QC

During the summer of 2013, I spent a month in Gatineau, Quebec, for an artist residency at the artist-run centre DAÏMÔN. The concept for a narrative video appeared to me while on the bus between Gatineau and Montreal one weekend toward the end of the residency. When I was in Gatineau, I spent a great deal of time walking outdoors—usually all day, as the residency is near the river and extensive bike paths. It was August, and the vegetation was fully expanded yet beginning to expire. It was refreshing to be out of the city, and I would walk outside all day on the different trails capturing video and thinking about plants and place. I wrote a script for a video one evening, and then asked a couple of people to read and record the voiceovers for the narrative. I had conceived the video as an initial sketch for a more developed work, with locative media and non-linear narrative videos connected to a search for embedded chimeric plant leaves displaying QR codes (now obsolete) around the neighborhood, which would link to the videos by mobile phone. The video sketch has never been exhibited other than at the initial screening for the public talk at the close of the residency. The video has the beginnings of an interesting narrative structure that I would like to expand upon in this section. I will draw attention to the three tropes that each vignette illustrates, and how these characters parallel contemporary reactions or interactions with environmental crisis and the speculative future of earthbound individuals. I wasn’t thinking of this when I wrote the script as it was just one of those creative expirations that happens quite often. But when I re-watched it more recently, a more critical reading formed, especially in terms of what Antonio Negri refers to as a

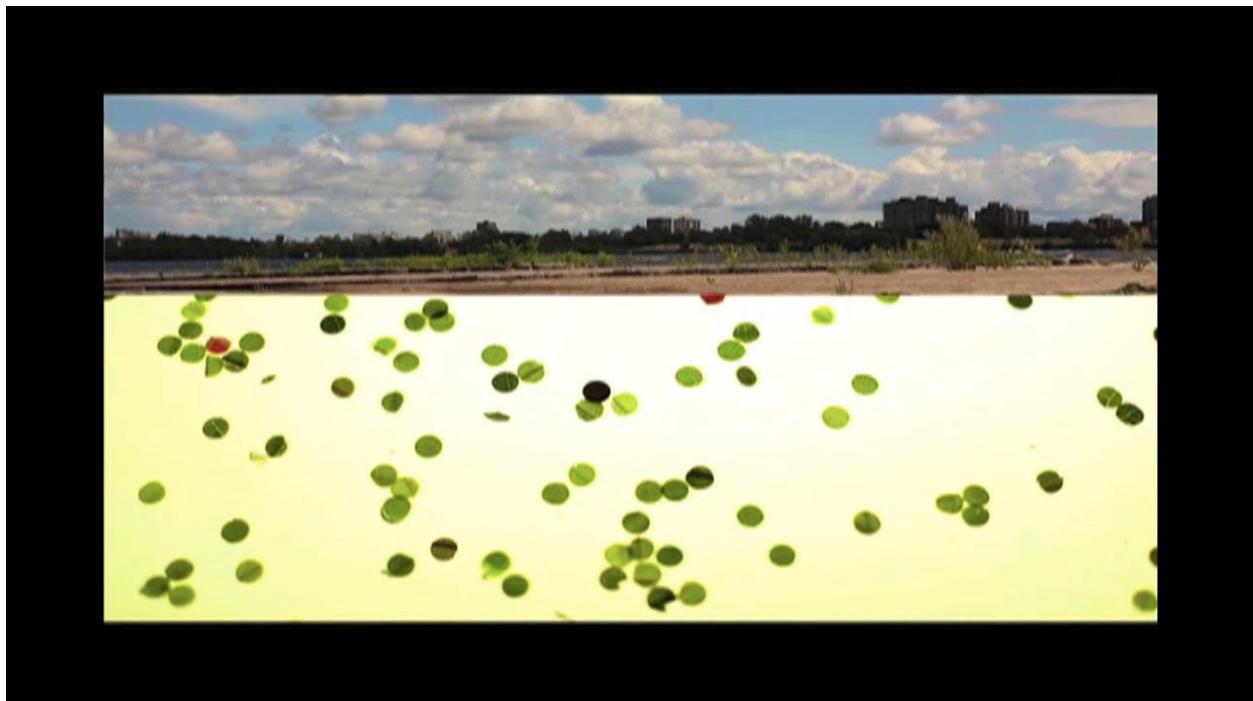
“paradoxical progressivism.” In *Supercommunity: Diabolic Togetherness Beyond Contemporary Art*, a diverse ensemble of artists’ reflections published via e-flux journal, Negri describes the project in his introduction as “produced by a ‘multitude’ of ‘singularities’ or ‘a mass of materials that dissolves and makes itself immeasurable in a multitude of singular pieces—and this ensemble speaks’” (Negri 2017, 1). It is about forming something, constructing and creating out of many divergent acts, things, experiences, places, people, and technologies, in a web-like constellation as a kind of assembled modality. In the introduction, Negri discusses the contradictory positions that diverse ensembles harbor where paradoxical perspectives are inevitable. Taken together, differently, at the same instant in the event of publication, many specific locations form a collective of creative acts that can “invert relationships of power” through a diversity of voices based in new forms of community versus capitalism. One of the apparatuses of capitalism that Negri refers to is the techno-automated movement of Accelerationism.

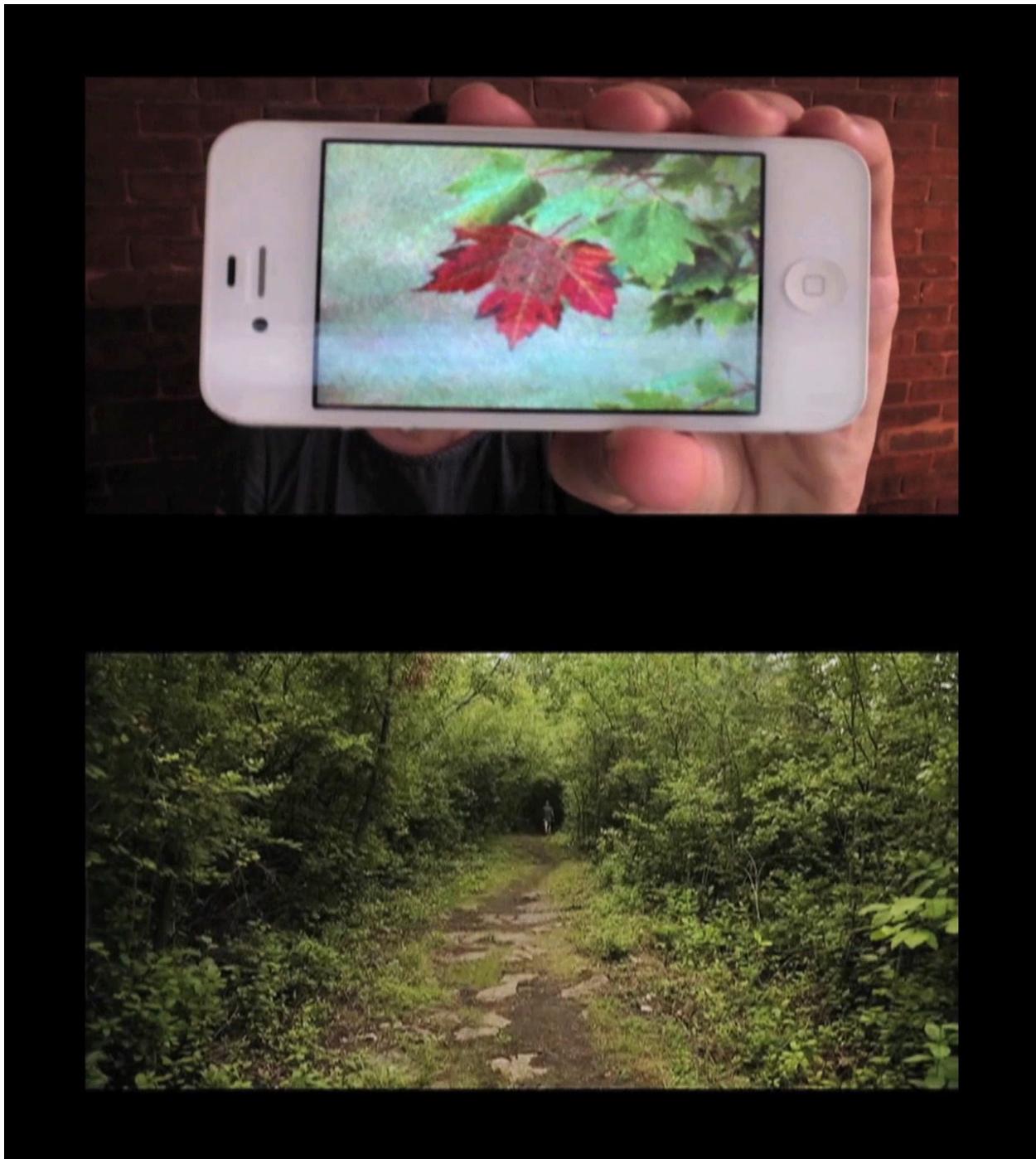


Image, this page to page 165, *In Search of the QR_ebra Plant* (2013). Video Stills.



Accelerationism is a term that brings together collective acts that support meshing technology, capitalism, and a systems approach to life. One example would be the building of hundreds of skyscrapers filled with vertically, hydroponically grown food in replacement of efforts to remediate and/or protect land and to encourage permaculture farming by and within local communities. Negri explains that what emerges from projects like “Supercommunity” is a paradoxical progressivism. In my video sketch, I wasn’t forming a new community from diverse ideas, but I sampled and illustrated activity from different semi-fictional accounts to form an open-ended query so that the viewer might





contemplate practices that merged living beings and different anthropogenic technologies. What kind of new communities could be formed with each of these different practices?

In the video, the first scene is about a local DIY group that is seed-saving, rather like the individual who is trying to act out protective strategies one minuscule effort at a time—what I will refer to as the *earthbound individual* (more on this to follow). The second part is about a dispersed community that is assembling a collection of plant life for

extraterrestrial space. This is a kind of utopian act that signals that it's too late for earth, so let's prepare to get out of here—the earth-is-doomed ideology. The last scene features the capitalist-consumer who revels in the merging of life and techno-gimmicks for purely disposable entertainment; this is the human, or the character I am least comfortable with at this time. Bringing together ecology and anthropogenic technology as praxis, as an act of practicing ideas with a hint of paradox, can act as a counterpoint within aesthetic-based inquiry for thinking about forming future multi-species relations. In *The Search for the QR-ebra Plant*, the video is divided into three parts, where different fieldwork or activities are illustrated. Each vignette brings together ecology, technical apparatus, and a kind of cultural metaphor through the production of a particular entity. The first character leads the viewer through a path in the forest to a makerspace (at Eastern Bloc, a Montreal artist-run centre), where archivists are producing 3D-printed plastic acorns that will not biodegrade for five hundred years. They are filled with different local seeds to be planted in the ground in different regions. The second account is of a hobbyist who is making a plant-tissue palette as part of a submission for a government project for regional living archives to be sent to the International Space Station. The third and final account is from an advertising executive who is searching for an escapee GM chimera plant that displays QR codes through its pigment patterns. This plant product is viewed as a valuable technology within the niche market of emergent biotech for the purpose of marketing in public spaces. The narrative then loops back to the beginning of the video. The last place the QR_ebra leaf was seen was “near the highway and a lake,” and the first scene opens with the voiceover of the narrator, who is lost on an unfamiliar path. It becomes a perpetual search down a path that seems to close inward upon itself, and into places that only lead back to the beginning again. What message is portrayed in this work? An increasingly cynical view on activities that merge biotech and ecology? The video is autobiographical, as I was working with plant tissue culture and plant chimeras, and researching alternative materials for 3D printing. These technologies and processes were part of my practice at this time, and I was growing increasingly disenchanted with these subjects—it didn't feel good. I didn't feel that making tissue cultures or 3D-printing objects were ecosophic activities, but I was also drawn to explore this discomfort in a kind of paradoxical practice. A selection of script from the video *In Search of the QR_ebra Plant* follows:

Part I. Near the Highway and a Lake

I don't really know where I am although I am near a small lake and close to a highway. I can hear both of these places, the highway is on my left, the lake on my right. I am following a man, although I have only seen him once. He passed by me quickly and then disappeared through the dark corridor on this path. I like the way he seems to know this trail intimately. He has the confidence of someone who has walked here many times. I follow him until the dark tunnel in front of me turns itself inside out. It is now a lit circle, an opening into a place where I meet some people who are discussing materials. When they finish their conversation, I ask them what it is they are doing here. They are archivists of some sort using a plastic that will only biodegrade after hundreds of years. Five hundred years minimum. They print these materials into the shapes of large seed capsules such as acorns and pinecones and fill them with seeds from the local region. The woman tells me that in hundreds of years it is possible that the plants that currently grow here may have transformed significantly, or may even cease to exist. She is making small time capsules that will be buried in the forests. Time capsules of seeds in plastic.

Part II. Collaging Space

This woman is collecting a hundred different leaves. She is not a botanist, she can only name and recognize a handful of plants that she will come across. This creates a bit of a problem as her ability to recognize each leaf and remember which leaves she has already collected blurs after a dozen or so. Her other problem is the distance she must cover on foot. She must travel far to discover new leaves as each microhabitat is quite homogeneous. She has been walking a lot and is tired. I want to know why she is collecting these leaves and she takes me to her room to show me. She is creating a tissue palette as she was once a painter and loves composition and colour although she is tired of this current summer palette which is predominantly pinky-purple, yellow, green, white, and burnt umber. "Look at every ditch and meadow around here and this is what you will see," she tells me. Plus, she is developing allergies for the first time. Her sniffling and sneezing

disgusts me. So do her weird collages. She finds this humorous and tells me about her friend who is into diseased, deformed, and insect-infested leaves.

“So what are you going to do with your tissue palette when you are finished?” I ask her. “I am going to send it to the ISS,” she says matter-of-factly.

“What’s that?” I ask.

“Oh, the International Space Station. They are currently advertising a call for submissions of living archives of plant tissue culture from different regions around the world. My collection will represent mid-south-eastern Canada. I am self-trained in micro-propagation. My cultures are usually about sixty percent sterile and quite successful.”

Part III. Composition for Chimera

I am not sure if I mentioned this, but I am searching for a specific leaf. That’s why I came here. I work in advertising but not the usual agency that writes copy for print or digital media. My firm specializes in emerging media—we are all about the immersive experience. It started in the nineties with sensorial marketing, scent, taste, and evocative environments. In the 2000s, it was locative media and smart objects. Now we do anything and everything in bio. I am currently working with a few select biotechnological institutions to create living organisms that live, breath, and act out the whims of our clients. We have a rather small but elite clientele. Offices in Amsterdam, Berlin, and Singapore, Hong Kong and Montreal. We don’t sell ads but genetic blueprints for organisms that emote through their very being, products, services, and other essences of our clients’ businesses. At the moment, I am the assistant creative director. A few weeks ago a client sent me a text with this image, a leak of some sort, but in my field an interesting enough lead to follow up on. Sure, QR codes are redundant, nearly obsolete, but our creative director, who I might mention is a little slow to the fade, yet is almost post-digital enough that I can put up with his directorial whims, wants to know who is making this chimeric plant leaf. Of course one can imagine the potential to custom manipulate the chlorophylllic pigment of a plant leaf could open up a new niche market for our firm. New places for plants, inhabiting the same places as people, parks, and

institutions, street sides and especially malls. Oh ... malls, the hybrid planetarium, consumerarium, hothouses. Clients would love this technology to embed their messages. No paper, no screen, just leaves so green. Usually, we would be the first to come up with this sort of concept. This time it's someone else, and it's my job to find out who is making what I call the QR_ebra plant. Unfortunately, things are not going as planned. The client said their daughter found the leaf while on a camping, no, on a family cycling trip in the Gatineau. They thought it was a bizarre mutation and left it at that. Days later, she kept thinking about it, decided to send me the image. She doesn't really remember where they found it, but by a small lake and a highway, she tells me rather vaguely. I have been searching for nearly a week and have not found the slightest trace of leaves expressing an unusual patterning in its tissue pigments.

This particular eco-aesthetic sketch emerged during a time when my practice was shifting. I was becoming self-critical in thinking about materials, and the acts that I was engaging and how they mattered. I was also thinking about whether I wanted to explore concepts in these material ways, and if so, how I would position the work. One of my approaches was to combine domestic objects with scientific processes such as micro-propagation. For example, in the video I perform the tissue-culture process slowly and carefully, but with a knife and fork (vs scaffold and tweezers). Or, in another work, a video produced for the *Plants and People Project*, my ten-year-old son Benjamin performs the tissue-culture process in a fish aquarium using antique glassware and candles. He is wearing a pair of oversize blue gloves and using a pair of tweezers. He awkwardly hits or misses the jars into which the samples are to be transferred. This was part of my aesthetic when working with wet-ware processes. I did not adopt the bio-art approach of dressing up in a lab coat like a scientist or working in laboratory spaces. I would create different ad-hoc, open-community spaces for experiments with plant and fungi propagation to describe the processes and materials to people who visited the gallery or my studio. The work may be considered educational and open-source, but it was still paradoxical in terms of an ecology of acts.



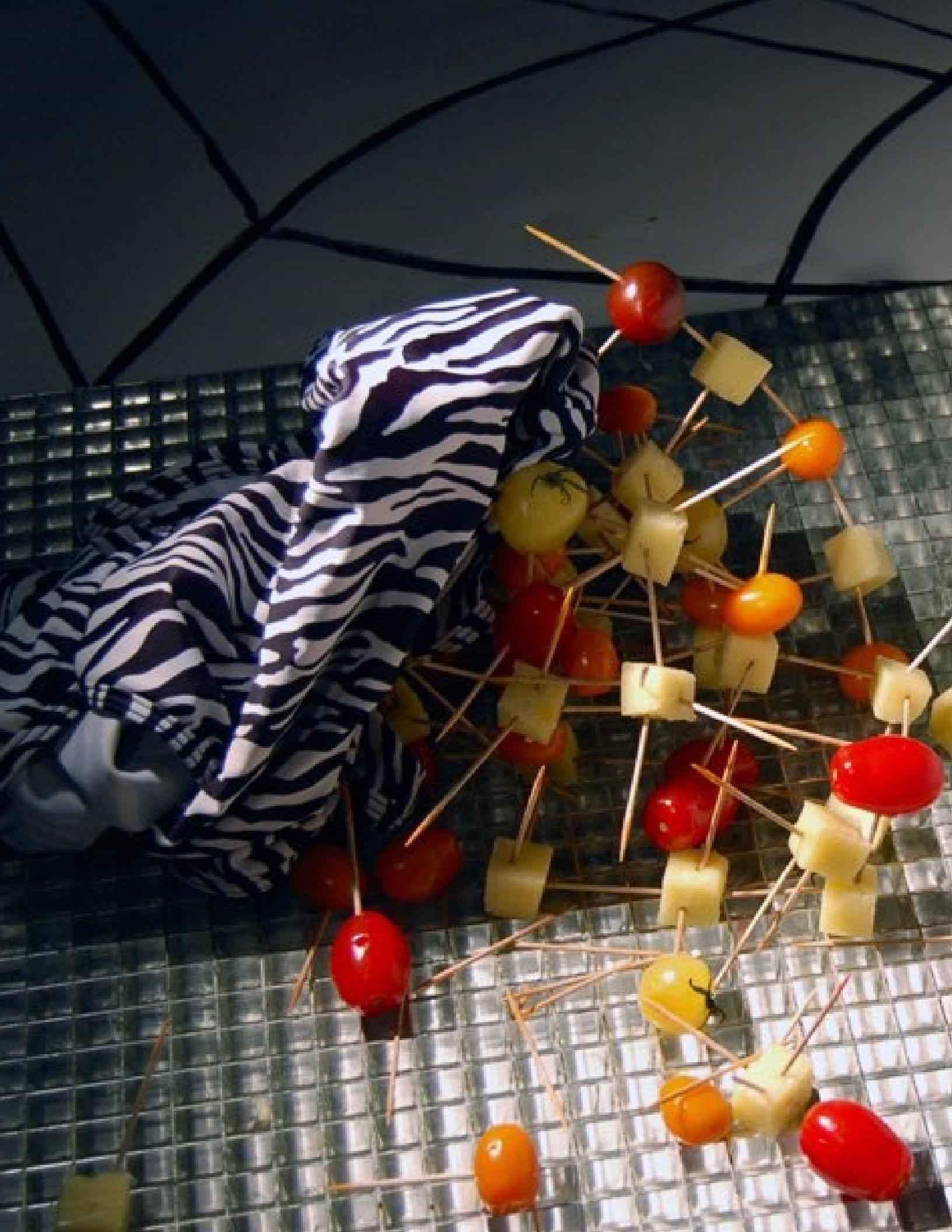
Image, *Seeking Chimera*. Building harps. Geneva.

Seeking Chimera, Residency (2016) Utopiana, Geneva, Switzerland

I call forth the concept of Chimera: Not only the chimera of mythological tales, blending human and nonhuman bodies, merging physiological and psychological qualities, but also the chimeric becoming's continually taking place in many creatures and objects. Some of these mergings are visible and perceptible, but most are not (*yet*), as they involve engaging senses other than those within human capacity such that they involve and are composed with vegetal, mineral, insect, fungi, bacterial, and many other living and nonliving phenomena. In this line of thinking, all phenomena have unique modalities for communication, expression, and memory — subjectivities that are difficult to imagine with

our anthropocentric heels so firmly pressed to a familiar earth-bound surface. Chimera's are quite common within vegetal communities where proximity between plants can result in a number of different variations or cellular mutations such as chlorophyll patterning of leaves resulting in pigment blending or blocking; yellows and greens. Or on the skin or bark of shrubs and trees – a thorny blackberry without thorns. Also, within the fruits of different trees – for example the *Bizzaria*, a lemon and orange fruit, a grafted chimera from the Florence region. One creature that is particularly fascinating is the *Elysia chlorotica*, a sea slug that as a result of horizontal gene transfer, is both a plant and an animal using sunlight and algae as energy. A more daunting chimeric event is the recent discovery of sea plastic-plants, the synthesis of sea plants and human produced plastic. I work within the theme of “chimeric becoming’s” using a number of different approaches. This includes contemplative inquiry with different texts, a series of collaborative site-specific workshops, and a daily walking practice in the local region to discover and think about notions of inter-relations between similar and very different organisms or phenomena. The walks and on-site workshops consider details, emphasizing very close attention and a sensitive monitoring of entities and overlaps encountered. I focus on the sonic, olfactory and sensual qualities of “things” and “places” consisting of boundless variations. This means using the breath, frequency, and smell to present numerous ways for thinking beyond the visible, past the initial or immediate bodily response into an emergent series of experiences that shift, perhaps becoming hybrid in nature. The work produced during the residency takes the form of an audio composition for guided contemplation in a park, forest path or other vegetal site as well an accompanying text. The workshops consist of the following thematic:

Vegetal Becoming - Chimerical entanglements between humans and plants. Sense based contemplation; breathing, touching, sensing, listening, shifting towards a deeper understanding of the plant’s or organism’s *umwelt* (from the work of Jakob von Uexküll, the Estonian biologist who pioneered *biosemiotics*, and who studied the unique sensory environments of different organisms). In this initial workshop we will present our artistic approach to working among plant-life and experiment with different conceptual and practical approaches for participants to expand and share their own practices toward biophilia. Participants may wish to bring a cushion or blanket for sitting/lying outdoors.



Image, previous page, *The Ancestry of Objects* (2013) video still. Banff Centre for the Arts.

positioning geometric forms in space using string, piano wire and gestural based audio recording processes. The accumulation of these exercises will inform the construction of a handmade sonic instrument, an extended polygonal horizontal harp for meditation and performance with plants, rocks, and other entities. The alignment, reach and tuning of the strings will be a collective design based on the outcome of “geometrical thinking” and discussions. Participants are invited to bring string, rope, wire, or other materials to be used to make geometric shapes on site. Please bring audio recording devices if convenient as well.

Umwelt and Micro-Composition - In addition to the chimeric blending of organisms, can the concept be expanded to include becomings where through interactions, being-with or sustained attention and care, entities that share very different *umwelt's* begin to merge into one another, to overlap? In this workshop we will focus on micro-composition: a sustained and careful attention to detail, both physical and conceptual, in a particularly small frame of space. Participants can bring some kind of visual recording device to work with (pencil and paper, digital camera, video recorder). A text, or small book work will be made in collaboration with interested individuals that compiles and extends our findings into semi-fictional and the imaginary, illuminating extensions of perception, or the existence of things we cannot touch, see and hear, but sense in some way.

The Ancestry of Objects (2013-2016)

The Ancestry of Objects was a series of videos made in the course of a series of acts as a live-set and performative installation using stop-motion animation, mural-size painting, video projection, drawings, as well as a number of sculptural props and residues such as clay, 3D prints, and textiles. The animations portray the development of material compositions, slowly evolving, enacting, and capturing nonlinear narratives in four chapters: “Ontologies of the Sublime,” “The 3-3-Day-Wars,” “Year of the Chimera,” and “Revelations and Hyperobjectivity.” Overall, the work explored connections between human psyche, location, and forms of materiality. Conceptual dimensions that often frame, such as narratives imposed upon objects, become a central theme, along with an acknowledgement of advancing earthly troubles. The work was

Image, *The Ancestry of Objects* (2016) Skol, Montreal.



initially conceptualized during a residency at the Banff Centre in 2013 as a stop-motion video and a series of digital photographs. The following is an excerpt from the video script for *The*

Ancestry of Objects:

[block of clay]

{division.growth.assemble.vocalization}

Some came to be vessels, others horizontalists, and then there were the malleables, the perpetually ambiguous forms that would reflect from within, thus forming a self from the nearness of other bodies. The vessels developed utterances, a limited verbosity. It was in enjoyment or boredom that they would terrorize the malleables with their orality. Perhaps it was mutually enabling:

umm	hmm	nooo	laaa
ahh	eee	duhh	daa
ohh	oouu	neee	psss
err	owww	ssss	foo
uhuh	ahah	shhh	fuh

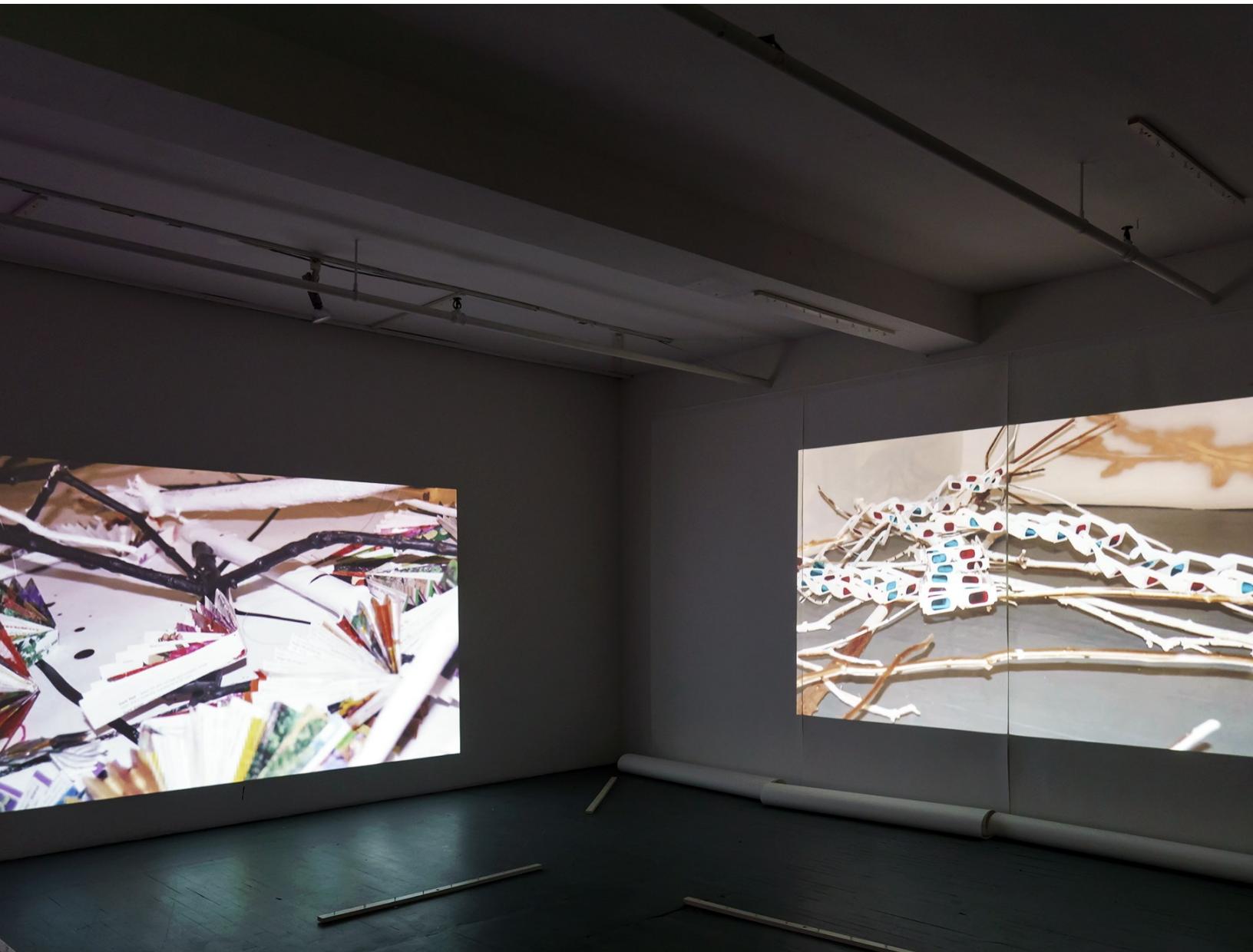
It can be asserted that the significance of these verbal acts eventually crystallized into a physicality of infinite dimensionality. Other factors such as a poly-terrainian *nature of things* accelerated numerous effects. In their notes-to-selves, it was stated that various after-effects could distort previous versions. This was obvious to even the most gentle and nimblest of the forms. Indeed, something of minor importance did occur, a-thing terrifyingly real. This was only a colossal factor and yet to speak of it, view it, or feel it would only act to redistribute its razor edged tentacles into the semi-soft consciousness of all contemporaries. The collective imagination of the vessels, the horizontalists and the malleables had permanently solidified.

During a late ontological shift in subsequent periodic epochs, there was a succession of notable transformations. Vessels became architectural. The horizontalists joined to form serpent like lines and coils and the malleables suffered extinction or perhaps were absorbed or dissolved — they may have dis-evolved. It can be claimed that they demineralized permitting a sequence of minuscule particles to form collectives with nearly invisible agents congealing an influential but somewhat unacknowledged position. The malleables were now airborne and simultaneously awaiting the crucial moment for reemergence and retribution. This was the most industrialist phase of the late transitorian territory. Other factors to consider:

1. the mesh
2. budgies with quantum sized magnets in their eyes seek to destroy glaciers composed of Styrofoam
3. networked planetary distributions of flesh and organic matter

4. combos of complex synthetic composites and fossilized plant and animal deposits as fodder
 5. molecular models of cheese and cherry tomatoes vs. zebra patterned body suit
- [...]

The first scene is composed of clay work as a rudimentary gesture of taking earth and forming it into objects in multiple scenes using simple pinch pots and coils (snakes), the basic shapes used in hand-modelling. The malleables are objects, made in clay, representing the various items on



my desk: an HD videocassette, a tube of chap stick, a pen, an ink bottle. A procession of ramen noodles eventually wipes out the entire ensemble, while cutouts from a pet-store budgie bird book animate into a flock that destroys a Styrofoam glacier. The last scene features a molecular structure growing out of Swiss cheese cubes and hothouse cherry tomatoes. This structure battles

Image, Previous page, this page, next pages – page 179, *The Ancestry of Objects* (2016) Skol, Montreal.





with a zebra-patterned bodysuit while ramen-noodle-printed paper towers, such simple architectural forms, move through the scene sweeping away the debris created through the acts.



The first in the installation series was produced during a performative exhibition at Centre des arts actuels Skol, Montreal, in November-December 2016. For this installation, multiple animated videos were produced for four video projections and the entire installation shifted and changed three times. Mural-sized paintings become boulders then wall-wizards then a “forest” of hundreds of decorative hand-folded fans made from glossy, vividly coloured seed-catalogue pages, along with spray-painted gold branches to enact life-cycles of growth and decomposition. Discarded tree limbs collected from back alleys enacted a room-sized choreography of movement and dance and then transformed into a geodesic cradle suspended in the middle of the room. A “loaf” shaped in potters clay was sliced open to reveal more glossy clippings of vegetables from gardening magazines. The slabs then systematically toppled (or engulfed) a steel merchandise display rack. Clay was repetitively squeezed through a closed hand forming an archive of creature-like figurines. These archive figures are animated in groupings or families and documented by type according to the various “arch” patterns of the squeezes that produced them. Tracings of the figurines are painted onto a fabric grid with symbols of unknown origin composed within a system of graph-based-animation. Combined, the tracings and symbols form a tunic, a tapestry, or maybe a flag. Sounds of stones dropping are rendered visual while maps draw their own black holes and all the soon-to-be-extinct clay figures are engulfed into a hole cut out as deep space. Materials and objects become many things while they continually shift, merge, disappear, reappear, act, and react.

The materials were kept basic: paper, paint, wood, clay, linen textile, a few objects from the studio, and materials from past projects that are continually repurposed in different projects (vinyl tubing from an earlier series, acrylic vitrines, 3D prints, a package of paper stereolithography 3D glasses, rope, ...). I animated objects for a week prior to the opening to produce four sets of videos as stop motion animations. I came in three more weekends and reworked the sets entirely, changing the animations and creating large-scale paintings, narrative murals set out to contribute to the unfolding stories for the objects in the room to enact. I had initially set up the space to have four 3D mesh zones (translucent lines connecting panels with a series of hooks on the ceiling and floor, forming a grid of about 3.5 metres cubed) in front of each large mural.

Even in this play-zone composed with minimal structure, the folding-together of narratives and object relations eventually lead to familiar narratives. These narratives must exist within my imagination and they differ to some extent but they form part of a conceptual story that I employ to make sense of where I am located in this world within specific assemblages and

apparatuses. Creating nonsensical narratives begins to poke at or unsettle the authority of the internal voiceover. Questioning the inherent stratification that such unnatural histories impose upon consciousness is a part of this process. Logically, I understand that there is nothing *natural* in stories that hold things still and in place—that these are narratives constructed with particular kinds of knowledge and articulated for specific purposes. I understand this, yet, I live in a zone where these narratives are embedded all around me in the way technologies are designed or the way specific roles are defined in a culturally specific reality.

Aesthetic practices are diverse including research, hands-on engagement with material, and aspects of performativity that evolve with a flux of assemblages in open sites to test out concepts. Material-semiotic narratives challenge the figuration of an individual or place as separate or discrete. In the exhibition proposal for *The Ancestry of Objects*, I describe a process of making the work over the course of the exhibition and also for including the audience in this process. I envisioned the set to be in a state of continual disturbance and not just through my interactions. Isolated, contained, sterile, hierarchical constructs of existence are not relevant in terms of planetary issues such as anthropogenic climate change. Self-contained sites for ideas to be contemplated one by one are part of exclusionary discourses. These can be subdued by expanding the varieties of practices that keep things still or immobile and through telling stories about expanded relations through acts and events.

Audible Vegetable Visible Animal Magic Mineral (2017)

The Garden of Speculations was a group show at the artist-run centre articule, Montréal, in spring 2017.⁴⁵ My contribution, *Audible Vegetable Visible Animal Magic Mineral (AVVAMM): Semi-Postanthropocentric Reenactments for a Terracqueous Orb* (2017)⁴⁶, articulated a living scenography, an audio and video installation as a place for sitting on the floor among a group of house plants set within a moiré patterned textile structure containing embedded speakers. The audio within the installation consisted of recordings of various tones from prepared tuning forks. There is a video on a monitor inside the structure on the floor displaying a looped five minute choreography of a juvenile sub-tropical aquatic snail (*Ampullariidae*) swirling in a surface-bound

⁴⁵ Artists exhibited: Kelly Jaclynn Andres (Montréal) Maude Bernier Chabot (Montréal) Véronique Chagnon-Côté (Montréal) Maude Deslauriers (Montréal)

⁴⁶ *Audible Vegetable Visible Animal Magic Mineral: Semi-Postanthropocentric Reenactments for a Terracqueous Orb* (2017–ongoing). Installation, articule, Montreal. The installation at articule was a modified version of the initial concept as it was a group show. The full project is described in Appendix I.

whirlpool in a glass aquarium. The surface reflection in the water gives the appearance that the snail has a double shell, like wings. The tiny snail pumps its *wings* furiously as it is propelled through the artificial tides, a continuous water jet ejected through a conduit of electric air pump, vinyl tubing, and pumice stone. I began AVVAMM with the following questions:

- What are the effects of geophysical disruptions on the bodies and psyches of different living beings?
- How do sound waves act as a physical indicator of changes among the earth, perceptible through mineral layers, stratification, sediment, formation of bones, or shells, and how can these occurrences be positioned within an aesthetic proposition?
- What form of relational and aesthetic performance or assemblage can bring these ideas into contemplative, self-reflective conversations with people?
- What kind of practices can help stabilize human psyche in the midst of geophysical flux, and perceived stress within urban environments?

All the panels (4'-6' diameter hexagons, recycled from a previous artwork) in the installation are covered with a mesh textile applied in layers creating a moiré pattern movement effect; there are five panels arranged on the floor in the installation. The work took on different forms as it was developed during the months prior to the exhibition. Initially it was designed as an intimate or immersive dwelling that people could lie or sit within, the audio would emerge from within a soft underlay. I envisioned the installation as a dramatic play, a screen of shadows, light, pattern and vegetal-human life that would involve viewers in the narrative when their forms moved through the installation. The plants were the central actors and their mobility, through being situated in pots, had morphed them into chimeric beings as *transplants*. The narrative “play” at this stage, was about the more formal elements of each transplant’s form, their shadows and presence in the space and relation to one another which would change continuously. At this phase, the assemblage becomes slightly anthropomorphic in tone as the potted plants assume a kind of separated individuality as characters. Next, I began to use the “set” while I worked, visited with friends, or when meditating. I found that as a space, it was highly conducive for concentrated and focused attention as it was open and airy but the moiré textile acted as a diffusion from distractions. The installation was transformed into a performance

structure to live-stream from for eight hours each day.⁴⁷

When I relocated the structure and plants to the gallery, it was arranged to assume a shell-like structure for visitors to inhabit the installation as a kind of externalized waveform along with the video of the flying water snail. As the group exhibition title suggested, the work became a speculative garden site. In this case, for the contemplation of the separation of thought from senses, in form, as meshing elements of an aqueous habitat (water snail, shell, tone) through air. And, perhaps even beginning to speak to quantum and sound physics through the particle distorted visual encounter the moiré patterned semi-enclosure created and the audio frequencies generated. For this exhibition, each artist designed an interactive activity for a public workshop. Mine familiarized visitors, through the use of a set of thirteen tuning forks, the affects of different sound waves, pitch, and frequencies on emotion and bodily sensation.⁴⁸ It was also a series of conversations by each artist about slowing down, listening, and feeling with different beings.

Why a vessel, an enclosure? To think and reflect? To mimic body-skull-shell-inside, learning to sit with oneself and go into the breath, a creature transfixated within, shell as a wave form, materialize sound, transplant separated from earth, an illusion of being individual as dramatic play? Water and air as slightly different elements but as together, snail-bird swims-flies in water-air, bubbles. tones, frequency is registered through contact with the skull, the shell of the human form, this subtle sound has a physical and emotive impact on an individual, what about much more intense wave forms that are encountered in everyday environments? Sirens, metal scraping cement, airplane engine, garbage trucks, concerts. What is the residue of the wave forms of significant geoformational events on beings? Who notices these things?

⁴⁷ Audible Vegetal Visual Animal Magic Mineral: 6 Day Performance and Sit-In

In preparation for an exhibition at articule April 22-May 21, The Garden of Speculations, I will stream for six days with the artwork as it is developed. The work consists of a sound installation constructed within mesh panels arranged to display different moiré patterns.

Link to livestream: <https://www.younow.com/Plant.and.Peradam>

Starts Wends 29th, noon - noon April 4th. Livestream between noon and 8pm each day.

⁴⁸ Frequencies produced by the tuning forks: 100, 128, 256, 288, 320, 341.3, 384, 426.6, 480, 512, 1,024, 2,048, and 4,096Hz[^]



Image, *ET Botanist* (2017). Video Still.

nevis, nevis, nevis (2018-2019)

A research based process is used to create a video installation, the work developed will consist of three videos from edited footage taken from different locations referred to as “nevis”. The videos will be displayed within an installation that features artifacts, objects, documents and photographs from each site-based inquiry (quantum temporality, postcolonial archive). Each site will require the development of research methods that can make space for more than human signification in the work. For example, using a “research” lens that considers the “umwelt” of different beings. This new body of work is a focused trajectory in direct response to a feeling of the importance of place, ecological disturbance, and questioning or exploring the process of *decolonizing nature*, a term borrowed from TJ Demos recent text of the same name, or what is the extractive as it relates to artistic practice and in terms of human relations to land. The outcome will be a series of video essays with connective or material artefact as installation. A visual essays connects specific research with place, the personal. More specifically, this work centres on the politics of land use, the relations between plant, people, animals, and different habitats, where the **nevis** sites are transformed into non-linear hubs, nodes in dynamic vectors or

web-like trajectories. I focus on material and the idea that it is possible to trace both physical and spectral clues to the embodied effects of: globalism; uneven geography, north-south discrepancy in terms the effects of climate change; migration and movement, who or what is moving and why, and where to. Colonial history marked on places as residue, or regrowth; on life, constant flux. Production of space: why do I see this way? What are the traditions of representation that can be dissolved, confronted or at least revealed? Embodied: how can I change the way a “place” is framed? A “self”: what is an intervention; what is an action? Problems of visual representation and individualism: how to transition? Rather than have a specific predetermined storyboard for the videos, I will conduct in-depth research about each nevis, but I will let the place, the experiential, and each series of encounters form the content. Ideas and destinations are prepared but these may not be the defining features of each nevis vignette. An important part of this project is to allow an open format, an ability to shift direction, and to respond to new events.

The nevis's:

Ben Nevis, Scottish Highlands, Scotland (Devonian volcano) Gaelic: Beinn Nibheis - mountain with its head in the clouds, theme: re-wilding - native plants and animals replaced with domestic, nonnative plants, super invasive animals, domestic, agriculture. Summit climb.

(near) Hamlet of Nevis, Alberta, Canada (Nièvès, Tail Streamlet People, Tail Creek Town), natural resource extraction, agricultural excess, oil extraction, there still is some natural space and animals, harsh climate, low population. Walking the creek bed (10km)

Nevis, Island in the Caribbean Sea (Oualie, beautiful waters, Strato volcano) colonial ecology, coral nursery, fieldwork, multi-species, reef - nursery, vegetation destroyed for sugar plantations, coral 80% dead. Very serious situation - violent history. I held a coral “brain” that had washed up on shore. I go to see and feel what this place is because it is difficult to comprehend.

Much of the artistic development will occur at the research, video scenography, editing, thinking, and production stages to achieve these conceptual goals. I envision the videos becoming a surround, a semblance, for the installation: A changing quality of light, sound,

movement, open narrative, that evokes a feeling of these nevis's and give some sense of differing evocative or emotive qualities of each nevis without being romantic, nostalgic, framing, representing or dictating the experience of the viewer. The installation objects will provide another series of layer/s, of access, to the research, to the nevis's. This is more in tune with ideas of lively, temporary archives, this has been a constant theme in my work. Archiving with living things, like fungi's, and agar agars, as entities of decomposition are active agents within every collection.

The Sandstone (2018–)

I started to work with lichens because I am fascinated by an idea that filamentous fungi are immortal. Aging, or senescence, is defined as a decreasing probability of reproduction, and increasing probability of death, with time. An immortal organism never ages, and the probability of reproduction or death may take unusual patterns. An immortal organism can still be killed, for example, it can be run over by a bus or chopped to bits with an ax, but it is no more likely to die of natural causes at age $x + 1$ than it was at age x .

—Anne Pringle (2017, G161)

The Sandstone was conceived for a recent video commission for a group exhibition at Lougheed House in Calgary, Alberta. The Lougheed mansion was built in 1891 entirely from sandstone during the early wave of oil discovery. Because oil is layered deep within the earth, which in this region consists of sandstone, a great deal of this stone was extracted and used as a building material during the oil boom. The theme of the show is to explore alternative relations and stories for other narratives to emerge beyond relating to matter, stone in this case, as a commodity or resource. What other aspects can be unearthed through creative and artistic interpretations of sandstone and the history of development supported by the oil industry?

A particular sandstone formation in Alberta, near where I live, has long captured my imagination. It is a sand-and-clay sandstone outcropping, high on a hill, which has numerous deep caverns that you can look into but cannot enter or see the bottom of. I have spent quite a bit of time on the sandstone—carefully, however, as it feels precarious to venture too near its deep crevices. I think this feeling, an incessant curiosity to peer into the depths, is part of the human desire to explore the unknown, part of the drive to go under the earth's soil and into the subterranean. Another part of exploration surrounds the alchemy of transformation, as the unique

lithospheric geography of this region has given rise to the proliferation of oil extraction from within sandstone and the use of technological means to enact state transitions in materials for economic profit.

My video explores these ideas, but with an abstracted imaginary of discovering: not the oil or coal layered within the sandstone, but strange geometric, unknown mathematical or fractal objects found deep underground, which, upon acknowledgement, act as tokens of what human-based extraction has sought to be (economic and technological development) and what it may not be (beneficial or sustainable in the long run). The objects reference a kind of magic that is not part of the material everyday of oil, plastic, and mineral extraction, but is connected more to a spiritual adventure of the mind, of the imaginary, and of another kind of natural energy resource all together. Select text forming part of the video's narrative follows below:

The sound of stones makes impossible the idea of interruption. To intrude, as is an interrupt, was only a recent gesture, vibratory, slight, trembling. How can this slip qualify as a stoney surround? You may query lichen, but which of billions in this place? Lyrical, orbicular whirl, imagine how silly, how subjective their answers will sound, will intrude upon your intellect: what is the sound of stone and four-million-year-old lichen? It may result in giggles. All the lichen I have met are radiant, with a sense of humour one has when immortal. I think I will never feel this weighty glee. Astutely sensitive to their surroundings are the feelings of these creatures, as they will never stay where the airs and rains are not well.

Look at all your colours, shades, gradients, dear stones. What plants, what trees, what meadows, were you once? This is a mystery far beyond the years my spirit group can know, can observe with beady little visions. No, we don't know the deepest gentle giants that give their full intensity of being, stratum, one stone perhaps is one compressed acre of life from another dimension if one comprehends the difference in dimensions as the modality that is given to an expansion of a collective assemblages moving through an energy field completely dependent on Soleil. Spirit of stars, celestial sisters, what infinite beauty in all the variations that exist between sun and the great sound: One small stone.

The sound of stones you will not know in this time because even anything near of thinking this thought into being shatters the force of existence. Inviting into the fabric, another map, of another black hole.

Why not interview the lichen? Will dance, will spiral, will dizzy-dizzy perpetually. Amaranthine constellation of ancient beings, in lichen laughter, this is not the sound of stones but much more after—

This sandstone is a new place, a soft sculpting near of water, not a sea, mineral water for old ices deep and high, a soft malleable-gently, warm, kind. What kind of plants were you? You take the warmth of the sun and the chill of the moon, keep your form, what is your sound, sandstone?

Lichen bonds, this may ignite a temporary assemblage, waters will dissolve you and this will be your bliss. Separated and free, sand in pure space you can be.

This video is part of a new body of work titled *Closer to Home?*, a series of contemplations that begins to engage intimately with land. The work starts out by initially exploring relations to place and memory, as the mental fabrications underpinning the idea of home. Can a concept of home actually be located in a specific place, or is it a much more complicated relationship to a number of locations physical and conceptual? When I was younger, I wanted to escape this place, as it did not compel my attention at that time. It is interesting to experience shifts in perception and how psyche is tied to place-based relations that change. As well, the rural site provides the opportunity to explore different multi-species relations, as it lies between a region somewhat undisturbed as well as more cultivated areas. With close attention, it is possible to be in both places to some degree, and to begin to comprehend the complex intra-actings these places are enmeshed within.

While I was working on this video, I was out at the sandstone for a few hours each day, for a couple of days. Even in this short time, I encountered many creatures while on their daily routines of hunting, territorializing, and seeking sustenance. I became attentive to the lichen outcroppings in the nearby meadow, and these beings shifted the focus of the video. The lichen is a complex assemblage hosting thousands of unique bacteria and fungi growing on exposed stone. They are one of the most ancient beings—perhaps, as Anne Pringle (2017) suggests, even immortal. When I began to research lichen during this time, I experienced a complete shift in my understanding of this place, and the possible relationships that had existed in this meadow for thousands of years. Forming intimate relations with unfamiliar creatures nurtures the growth of earthbound stories to think about and share, expanding human understanding and engaging in gestures that matter.

Welcome the Terran's, Proposal (2018-)

The Earth is wretched because its soil — that thin layer of earth at the surface of the planet upon which we depend for life — is contaminated, eroded, drained, burnt, exploded, flooded and impoverished on a worldwide scale.⁴⁹

⁴⁹ Ros Gray and Shela Sheikh, “The Wretched Earth: Botanical Conflicts and Artistic Interventions”, Third Text, 2018, Vol. 32, Nos. 2-3, 163-175.

Welcome the Terran's is a project that focuses on exploring human relations with soil.⁵⁰ Using multiple modes of artistic research, art production and community engagement, the work invites individuals to reimagine and animate our interconnectedness to the immediate environment that is almost always below our feet: AKA soil, earth, ground, land, humus, loam, stone... This special place is actually composed of entire communities including us, the human, and furthermore, soil can be understood to be the very infrastructure for life itself. Yet for many, it is visible only when it is no longer hospitable for life.⁵¹

Who are the Terran's and Why Welcome Them? The Terran's are self-identified as those who think deeply and act with the idea that many humans must become more in-tune with their earthly surroundings. Terran's understand that they are part of the earth and not separated from it. They seek to respond to and with the perpetual uncertainty of planetary existence. Terran's efforts and work are focused on creative strategies for adaptation and interconnection with multi- species beings. They often work in forms of remediation, giving efforts, care, and reflexive thought on our existence within this aqueous sphere of mass referred to as Earth. Terran's are part of and take some responsibility for every being, including those that continue to act in ways that cause harm to living habitats and creatures. Terran's acknowledge that there is no away or separation for anything. Nothing is disposable, and bringing "things" closer may be a way to mediate the amassing archives of anthropogenic effects that continually accumulate. For my project the persona of the Terran will facilitate an open and nonjudgemental approach to public engagement with creative thinking, diverse artistic mediums and performance-based-actions that will compel individuals to share, reflect, and develop their own practices of care — for soil, and in turn, all of life.⁴⁹

I developed a concept that is relevant in diverse communities: rural, mid-sized towns, villages, and urban centres, while also in dialogue with different industries that are the current backbone of this economic landscape; namely, agriculture and extractive industries. The activities of these industries effect everyone - human and more than human, in this

⁵⁰ Terran's is from Déborah Danowski and Eduardo Viveiros De Castro's work *The Ends of The World*, 2017, The authors derive Terran from the word *terre*, french for earth, and expand it to refer to the people who are earthbound or of the earth. Throughout the text, Danowski and De Castro attempt to understand the range of possibilities for exactly who these Terran's are, have been, or can become in relation to global anthropogenic environmental crisis.

⁵¹ The concept of soil as the "infrastructure of life" is borrowed from María Puig de la Bellacasa in *Matters of Care*, 2017.

place, and globally. By focusing on peoples relations with soil from an artistic context, the project will also depend on a diversity of knowledge from diverse individuals such as: artists who work with ecology, soil scientist's, people whose ancestors have lived in these regions long before settlers, scholars working in Environmental Humanities, citizen scientists, farmers, geologists, individuals who work in extractive industries, gardeners, and entomologists. One important aspect of the project is to continually gather different insights so that the project is always evolving and generative by compiling resources and inspiration, thus becoming a node via a mobile studio moving the project between communities.

Community Engaged Art Practice. Each community I visit will provide unique responses and interactions with the project and this is also a key part of the work — responding and working within diverse communities. *Welcome the Terran's* is an innovative art project; it fits into the category of social or public practice, community-engaged art or new genre public art. This kind of practice is interdisciplinary (video, new media, photography, sculpture, painting, performance, research) and many of these mediums are enacted within the larger framework of the artistic concept to communicate different aspects or findings. This kind of practice will be quite interesting to people who encounter the project as they will learn how expansive and interactive different forms of visual art can be. In past projects that I have exhibited, people have expressed how surprised they are that "art" can actually be such an open process as they become directly part of enlivening the art work through participation. The project will also act to connect and inform communities in regards to a vitally important topic as soil relations is about everyone, and it is crucially relevant in this time of earthly troubles. As a topic, soil-human relations will merge with my multidisciplinary art practice so that through different creative articulations, I act as a vector to share and interpret ideas, reflections and responses gathered from community visits.

Over a year or so this ongoing practice will include: performative presentations (for schools, community forums, cultural centres), pop up exhibitions (farmers markets, fairs, malls, empty storefronts), creative citizen science workshops (DIY collecting and testing soils), artist walks or site visits, video/audio (deep listening) and site-specific performances, works on paper with soil, electrography with soils. A final multi channel video installation for exhibition would be organized based on the year long research, community engagement, ongoing works, and soil samples. An artist book and curatorial

text documenting the project would also be produced to accompany the exhibition. The project will have a strong online and social media component to share perspectives of artistic practices with the government, various industries and the public.

Artists are cultural workers and it is essential to communicate the key roles we play by introducing forms of agency through imagination. Imagination and alternative modes of thinking encourage the actualization of new ways of relating to and living in the world, and to activities that encourage world-making.