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# Dispersal: a multidisciplinary investigation of plant life

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Dispersal:  
a multi disciplinary investigation of plant life.

A thesis submitted in partial fulfillment for the requirements of Master of Fine Arts at  
Virginia Commonwealth University

by  
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Dedicated to *Asimina triloba*,  
whose uncanny nature began this inquiry

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## **Abstract**

DISPERSAL: A MULTIDISCIPLINARY INVESTIGATION OF PLANT LIFE.

By Alexandra Arzt, MFA

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Fine Arts at Virginia Commonwealth University.

Virginia Commonwealth University, 2015

Major Director: Paul Thulin, Graduate Director, Photography and Film

Using plants as a basis for exploring the interstices between the human and nonhuman, this thesis investigates ideas of awareness, intelligence, deep time, animism, and the fluctuating human perception of the agency of Nature. It outlines environmental art practices since the 1950s involving vegetal life. In addition, the paper provides a critical analysis of plant perception of Jakob von Uexküll's work and theories of vital materialism and "critical plant studies" while noting recent studies in plant neurobiology. In my work, plants become active participants via their movement, seeding, and smell. This study of how to relate to vegetal life takes the form of imitation, purposeful symbiosis, anthropomorphism, and touch and uses an interdisciplinary practice involving various experiments, video, and plant life. In suggesting a new possible understanding of plants, the work argues for a new ecological ethos in a time when global warming weighs heavily on world policy and consciousness.

## I. Introduction

I know what you think: this is foolishness. They're only vegetables. Even the blossoms with which they begin are small and pale, hardly significant. Our hands, or minds, our feet hold more intelligence. With this I have no quarrel.

But, what about virtue?<sup>1</sup>

My work seeks to understand the current human-nature ecology. Through multiple experiments, processes, and positions, I hope to evoke both connectedness and awareness through a slow rooting, personal understanding that we are not separate from nature, from the living world and its ecological systems. I am building an understanding of concepts of nature through a dominant western history, the evolving hierarchies therein, and the tension between science and magic in explaining those concepts. I work intimately with the

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<sup>1</sup> Mary Oliver, *Why I Wake Early: New Poems* (Boston: Beacon Press, 2004), "Beans," p. 10.

living and non-living things that constitute the spaces I inhabit as part of a multi-disciplinary studio practice.

The Great Chain of Being, or the divine hierarchy which places humans as superior to all life, is an error of perception, one informed by two millennia of anthropocentric thought resulting in increasingly dire environmental consequences. Though much work has been done on bringing animals to the forefront of philosophical thought, plants have been widely ignored and kept in the background as decoration, raw material, or food, even though they inhabit and even form most of the livable surfaces of the planet. In an increasingly urbanized world, plants are widely recognized in generalized, non-specific terms like “tree” or “weed.” When plants are recognized by name and unique characteristics, even those within or outside human utility, it causes an environmental paradigm shift in that suddenly the human space is shared by multiple agential individuals, vegetal or animal, all striving cooperatively and competitively to survive. For example, knowing the human and natural history of the Ginkgo trees on N. Harrison Street suddenly connects our surroundings to the Jinfo and Tianmu Mountains in China, where the remaining stands of this 200 million year old species were possibly tended by monks for thousands of years, and later brought west by European plant hunters in the mid nineteenth century.<sup>2</sup> This fact links the ginkgo and the streets of Richmond to the mystery of deep time and contextualizes the urban space both ecologically and historically.

Recent studies show that plants are far more active in their environments than commonly believed. Their advanced chemical signaling and even familial cooperation

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<sup>2</sup> Peter R. Crane, *Ginkgo: The Tree That Time Forgot* (New Haven: Yale University Press, 2013).p 160-167.



through their roots reveal previously unprovable relationships.<sup>3</sup> Plants function on a timescale much slower than ours, and changes can only be detected by the human eye over prolonged observation.<sup>4</sup> Without taking a class on botany or horticulture, how can artists and art audiences *learn* plants in a similar way that biologist Jakob von Uexküll studied the life cycle of ticks in *A Foray into the Worlds of Animals and Men*? He asked of the tick, “Is it a mere object or a subject?”<sup>5</sup> The world of plants can similarly be accessed through an imaginative empathy. However, developing a nature based art practice figuratively places one foot within the aloofness and violence of humankind’s treatment of the environment, and one foot within the realm of the mystic, channeling instinctual perspectives to define a nature-culture paradigm.

Using plants as a basis for exploring the interstices between the human and nonhuman, this thesis investigates ideas of awareness, intelligence, deep time, animism, and the fluctuating human perception of the agency of Nature. Agency is traditionally defined as the presumably human “ability or capacity to act or exert power.”<sup>6</sup> A necessary updated definition of agency is largely informed by the theories of Jane Bennett’s vital

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3 "The Networked Beauty of Forests - Suzanne Simard," *TED-Ed*, 13 Apr. 2014, <http://ed.ted.com/lessons/the-networked-beauty-of-forests-suzanne-simard#review>; Monica Gagliano, "Seeing Green: The Re-discovery of Plants and Nature’s Wisdom," *Societies* 3, no. 1 (2013): p. 151, doi:10.3390/soc3010147.

4 See: Charles Darwin and Francis Darwin, *The Power of Movement in Plants*, by Charles Darwin, Assisted by Francis Darwin. With a Preface to the Da Capo Ed. by Barbara Gillespie Pickard (New York: Da Capo Press, 1966), Also see: Daniel Chamovitz, *What a Plant Knows: A Field Guide to the Senses* (New York: Scientific American/Farrar, Straus and Giroux, 2012)

5 Jakob Von Uexküll, *A Foray into the Worlds of Animals and Humans: With A Theory of Meaning* (Minneapolis: University of Minnesota Press, 2010), p. 45.

6 OED s.v. “Agency.”

materialism, which advocates for the vitality of all matter, human and nonhuman, living and nonliving. Vital materialism distributes agency throughout intermingling bodies. Human agency cannot be isolated from nonhuman actors. For example, recent studies link mood to gut bacteria.<sup>7</sup> Innumerable tiny beings make up our beings and become actors within what we think are “our” actions. In Bennett’s words, “the *its* outnumber the *mes*.”<sup>8</sup> Vital materialism encourages a naiveté in observations and understanding of reality, and a vital materialist cultivates an attention that will

Try to linger in those moments during which they find themselves fascinated by objects, taking them as clues to the material vitality that they share with them. This sense of a strange and incomplete commonality with the out-side may induce vital materialists to treat nonhumans—animals, plants, earth, even artifacts and commodities—more carefully, more strategically, more ecologically.<sup>9</sup>

This careful consideration can aid in rethinking the concept of agency as exclusively a divinely endowed human attribute, and begin to understand it as a fluid intermingling between the human and nonhuman entities that constitute our world. Human agency is implicated within an increased ecological awareness based on the co-evolution with plants that is constantly in flux.

In my work, plants become active participants via their movement, seeding, and smell. This study of how to relate to vegetal life takes the form of imitation, purposeful symbiosis, anthropomorphism, and touch. I explore these ideas through an

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<sup>7</sup> Peter Andrey Smith, "Can the Bacteria in Your Gut Explain Your Mood?," The New York Times, June 27, 2015, accessed August 01, 2015, [http://www.nytimes.com/2015/06/28/magazine/can-the-bacteria-in-your-gut-explain-your-mood.html?\\_r=0](http://www.nytimes.com/2015/06/28/magazine/can-the-bacteria-in-your-gut-explain-your-mood.html?_r=0).

<sup>8</sup> Jane Bennett, *Vibrant Matter: A Political Ecology of Things* (Durham: Duke University Press, 2010), 112.

<sup>9</sup> *Ibid.*, 17-18.

interdisciplinary practice involving various experiments, video, and plant life. In suggesting a new possible understanding of our photosynthesizing cousins, the work argues for a new ecological ethos in a time when global warming weighs heavily on world policy and consciousness. Knowing plants is a way to know the local and global environment intimately through seasonality and resilience, through understanding the biological needs of another creature, and therefore empathizing with it as a living thing surviving in this space and time. Plants survive and evolve alongside us, and we endlessly influence each other in a history that extends as far back as the origin of life itself.

## II. Background

Much of my work at Virginia Commonwealth University investigated the contested nature-culture dichotomy and the limits of a still image in embodying or translating it. I have pushed against those limits, and using a background in the alchemical processes of analog photography, I made installations involving objects, photographs, sound, smell, and touch. My personal experiences foraging in the woods for plants and fungi, keeping multiple gardens and houseplants, and working at Lewis Ginter Botanical Garden have all influenced my current work and initiated an ongoing inquiry into the nature of plant life.

The farm where I grew up and now visit often largely forms my understanding of the natural world. It sits on pastures, riverside, and forests of which I know intimately, and I am continually surprised and astounded by its resilience and flux. Part of this knowing comes from sustained attention. Just as Annie Dillard notes in *Pilgrim at Tinker Creek*, “I would like to know grasses and sedges—and care. Then my least journey into the world would be a field trip, a series of happy recognitions.”<sup>10</sup> Knowing the names of things, whether the folk name or the Linnaean taxonomy, is a start in the many steps to build an

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<sup>10</sup> Annie Dillard, *Pilgrim at Tinker Creek* (New York: Harper Collins, 1974, reprint 2013), p. 17.

experiential understanding of the nonhuman. Freya Mathews, an environmental panpsychic philosopher, describes this relationship with land:

We are never betrayed by land. ...The in-loveness between self and land or self and place then persists, even if self is separated from the land or place in question. As long as the in-loveness endures, the self remains open-eyed, cradled in its primal enchantment.<sup>11</sup>

I carry this enchantment with me. While in Richmond, The James River Park System and Pocahontas State Park expanded my knowledge of the seasonal changes of mushrooms, trees, and plants, some which have found their way into the studio.

In recent years, climate change has become a central concern for governments and citizens alike. The Intergovernmental Panel on Climate Change reported in 2007 that “most of the observed increase in global average temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic greenhouse gas concentrations.”<sup>12</sup> Such cultural phenomena as the “green” and local movements occur and rec-occur as a reaction to findings linking climate change to man made causes. The atmosphere becomes increasingly urgent when theories of a sixth extinction or the Anthropocene, the human epoch, enter the popular imagination and conversation. Plants themselves literally create a habitable climate. For example, deforestation in the Amazon rainforest can be directly

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11 Freya Mathews, *For Love of Matter: A Contemporary Panpsychism* (Albany: State University of New York Press, 2003), p. 20.

12 "Understanding and Attributing Climate Change," Intergovernmental Panel on Climate Change, 2007, *Climate Change 2007: Working Group I: The Physical Science Basis*, [http://www.ipcc.ch/publications\\_and\\_data/ar4/wg1/en/spmsspmp-understanding-and.html](http://www.ipcc.ch/publications_and_data/ar4/wg1/en/spmsspmp-understanding-and.html).

linked to the severe water shortages in Rio de Janeiro.<sup>13</sup> Destroying trees and their ecosystems makes life on earth increasingly precarious. Even while walking the alleys of Richmond in the July mid day sun, massive relief can be found under the canopy of an old willow oak. That single oak reduces the heat radiation of the sun in the city, even if only marginally.

The objective of the work is to answer questions formed during my time in graduate school. A past photography series entitled *Human-Animal* (2010) considered the perceptive abilities of animals in people's homes throughout the United States, and I sought to continue that same line of inquiry to other living things, specifically the kinds rooted to the ground. I wondered, what is it like to be a plant? Or rather modeling on Thomas Nagel's question of bat perception,<sup>14</sup> what is it like for the plant to be itself? And what can that tell us about ourselves and our relationships with nonhumans? Panpsychism, or "the view that all things have mind or a mind-like quality"<sup>15</sup> offers a similar way of thinking about nature. Though there is no irrefutable proof of the inner life of nonhumans, panpsychic philosopher Steve Shaviro writes, "I nevertheless do acknowledge and respect the inner lives and values of other human beings, I can potentially do the same with other entities of all sorts. What's needed, perhaps, is an extension of sympathy."<sup>16</sup> Imagining the life of the

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13 Jan Rocha, "Drought Bites as Amazon's 'Flying Rivers' Dry Up," Climate News Network, September 14, 2014, <http://www.climatenetwork.net/drought-bites-as-amazons-flying-rivers-dry-up/>.

14 Steven Shaviro, "Consequences of Panpsychism," in *The Nonhuman Turn*, ed. Richard Grusin (Minneapolis: University of Minnesota Press, 2015), p. 25.

15 Ibid., 19.

16 Ibid., 40.

other inevitably opens up an expanded sympathy which transforms them from a mere object to an active subject who is also growing, thinking, reacting, and acting within the same environment, though with a different set of signs.

I argue for the sentience of nonhuman beings, including plants, by using art as a way to subjectify their experience in a “more-than-human-world.”<sup>17</sup> This renewed perception of plant life encourages, in philosopher Michael Marder’s words, “a drastically different comportment toward the environment, which will no longer be perceived as a collection of natural resources and raw materials managed, more or less efficiently, by human beings.”<sup>18</sup> My work suggests new possibilities to understand human and nonhuman perceptions, which when reimagined, make our environments, whether in a city or the most remote wilderness, appear richer and more complex through the act of learning the life that inhabits it with us.

In contemporary art, plants are generally used as decorative objects, background, representation, or as demonstration of systems to suggest models for food production. My work investigates the being of plants themselves, and how hierarchical thinking can be avoided. Naming and recognizing plants as actors in their environment rather than mere background scenery opens up more complex ways of reading a landscape that constitutes multiple histories and interspecies connections.

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17 Bennett, *Vibrant Matter*, 256.

18 Dominic Pettman, "The Noble Cabbage: Michael Marder's "Plant-Thinking"," The Los Angeles Review of Books, July 27, 2013, <http://lareviewofbooks.org/review/the-noble-cabbage-michael-marders-plant-thinking>.

### III. Environmental Art Practices

The art that informs my practice ranges in a series of dispersed positions such as artist researchers, scientists, horticulturalists, gardeners, foragers, theorists, poets, shamans, and historians. These modes of thinking span across disciplines and often evade traditional categorization.

#### 1. Plants in Fluxus Art: Early Foundations for Looking at and Listening to Plants

The Fluxus movement sought to incorporate everyday life and art within the many varied and difficult to trace practices of its artists. Using methods like event score performances, film, sound, and Fluxkits, the artists of the 1960s and 70s worked to challenge the art world norms of the times by consciously operating against Pop Art, Abstract Expressionism, and the art market. By bringing our attention to objects and actions that might typically be considered nondescript, Fluxus helps its audience to see anew everyday objects, activities, and environments by transferring “the highly attentive attitude of perception that is traditionally adopted when receiving works of art to impulses



that are ultimately indistinguishable from those generated by daily life.”<sup>19</sup> Fluxus works bordered between shocking and boring, and drew from the traditions of Dada and the readymade while operating amongst philosophies of Zen Buddhism and anarchism. Drawing on the Fluxus hyper-attention to everyday objects, artists at times took an interest in the natural world of plants—those living objects we live with, trample, consume, and pass by everyday. John Cage, Alison Knowles, and Robert Watts have all used plants in their work via elements such as sound, time, and performance. Because plants are alive and inherently time based within a life cycle, they act as chance-operators in Fluxus pieces by existing in their own spaces activated by the actions of the artist or performer.

John Cage demonstrates concepts of chance operations, sound sourced from life, and improvisation in his piece *Child of Tree* (fig. 1) in which the performer transforms mute plant life into instruments. Originally written for Merce Cunningham’s 1975 *Solo*, the piece was inspired while on tour in Arizona when a dancer plucked a cactus near Cage’s ear. The score of the piece, which exists now as a scribbled manuscript, instructs the performer to use ten instruments all made of plant material that are chosen by means of I Ching chance operations. According to Cage, “I amplify plant materials with contact microphones and simple sound systems. There I give directions for improvisation because the improvisation can’t be based on taste and memory since one doesn’t know the instruments.”<sup>20</sup> Therefore each time the piece is performed it is wholly unique, guided by the I Ching and the performer’s intuitive play with their unfamiliar instruments. Cage’s often magical and lucid

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19 Dorothee Brill, *Shock and the Senseless in Dada and Fluxus* (Hanover, NH: Dartmouth College Press, 2010), p. 134.

20 Richard Kostelanetz and Richard Kostelanetz, *Conversing with Cage* (New York: Limelight Editions, 1988), p. 92.

reflections on nature and his love of the forest and mushroom hunting give him a special connection to plant life. No two cacti are the same, and perhaps that is one reason natural objects were so attractive for Cage to employ in his work. In *Child of Tree*, Cage brings sound and voice via human intervention to a medium that appears inert and unremarkable to an uninterested eye.

The seed as a source of energy and life makes its appearance in Fluxart as well. Because eating is an everyday obligation to sustain human life, many Fluxus artists chose to turn their attention to food. A student of Cage, Alison Knowles asks her viewers to consider the humble bean; a seed and an ubiquitous, inexpensive, nutritious, and filling staple food. In a lecture at the Frieze Foundation in 2011, she posed the question, "In my daily life, are there not mysterious and unconscious revelations to explore?"<sup>21</sup> In her Fluxkit work *Bean Rolls* (1963), she affirms that her daily life is indeed riddled with rich subjects (fig. 2). The Fluxkits were orchestrated by Fluxus founder George Maciunas as saleable multiples. *Bean Rolls* consists of a custom labeled food can containing several beans and seventeen small scrolls, "each with material about beans in songs, recipes, stories, science, cartoons, ads etc."<sup>22</sup> Knowles wrote a corresponding event score entitled "#12 Simultaneous Bean Reading" which reads:

Using the Alison Knowles Bean Rolls and six to eight performers, unroll the rolls over the audience and start reading aloud. Have the audience join in. A single performer goes among the other performers with scissors, cutting out

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21 (lecture, Alison Knowles, Frieze Foundation, London, October 16, 2011), <http://www.friezefoundation.org/talks/detail/alison-knowles>.

22 Alison Knowles, "Bean Rolls," accessed October 27, 2013, <http://www.aknowles.com/beanrolls.html>.

large sections of the rolls. This performer determines the length of the performance.<sup>23</sup>

Fluxus works take art objects and activate them through performance and audience participation. The piece exists most richly when it is being performed rather than simply viewed in a museum case. The performance was broadcast as “Bean Sequences” as part of a radio show in Germany in which performers read the Fluxkit scrolls while beans are simultaneously used as makeshift instruments in the background.<sup>24</sup> The scrolls contain such information on beans as their ethnographic significance and histories, as well as their botanical notes and instructions for growth. In performing with the scrolls, Knowles utilizes chance operations, and like Cage, produces a unique reading each time. By engaging the history of beans anthropologically, Knowles also engages time elements in a new dimension by bringing narrative to the mundane. Plants can be transformed into sound, energy, or art objects, which makes them especially fertile ground for Fluxus explorations. Like Cage, Knowles animates a natural plant material into an instrument in the form of a shaker. Fluxus artists were invested in opening up the art world to draw attention to the things we do not give concerted consideration. Once a viewer has heard Knowles’ unique treatise on beans, they are more receptive to hearing music in the pouring of beans into a pot, coffee into a grinder, or lentils in a bag at the store– the very mission of Fluxus.

In his series *Tree-Wind Paintings* from the 1980s, Robert Watts allows trees to act upon paper via his action, felt tip pens, string, paper shooting targets, and wind (fig. 3). He tied

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<sup>23</sup> Alison Knowles, “Event Scores,” accessed September/October, 2013, <http://www.aknowles.com/eventscore.html>.

<sup>24</sup> “Alison Knowles Bean Sequences,” UbuWeb, accessed 2013, UbuWeb. [http://ubumexico.centro.org.mx/sound/fluxus\\_corner/Fluxus\\_02-Alison-Knowles\\_Bean-Sequences-Bohnen-Sequenzen.mp3](http://ubumexico.centro.org.mx/sound/fluxus_corner/Fluxus_02-Alison-Knowles_Bean-Sequences-Bohnen-Sequenzen.mp3).

various colors of pens on tree branches and allowed them to draw on paper. Watts invites chance in the form of weather and species of tree to determine the form of the painting. He makes choices in creating the work, but ultimately his environment determines the form. Trained as an engineer, Watts combined science and art in his practice often because it “allowed for a bigger and less aesthetically defined field for possible action.”<sup>25</sup> Though he made the tree paintings in the eighties, his influence and oeuvre originated in the Fluxus lineage and philosophies. By allowing the tree and circumstances to create the marks, he employs chance operations in this piece. He also creates an interest in every day life by using a tree branch as the artist or mark maker.

## 2. Gardeners and Farmers

Civic practice artist Frances Whitehead actively questions what an artist can do. She calls herself “a professional dot connector” and her works involve various and highly involved collaborations with city officials, neighborhoods, scientists, designers, architects, and fellow artists. As part of her *Embedded Artist Project* in collaboration with The School of the Art Institute of Chicago and the City of Chicago, she created “What Do Artists Know?” (fig. 4) a PDF pamphlet detailing eleven answers to that prompt, including “making the explicit the implicit – making the invisible visible.”<sup>26</sup> She uses gardening and plant husbandry to develop her thinking and projects. In an interview with *Find the Conversation*,

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25 B. H. D. Buchloh, Judith F. Rodenbeck, and Robert E. Haywood, *Experiments in the Everyday: Allan Kaprow and Robert Watts, Events, Objects, Documents* (New York: Columbia University, Miriam and Ira D. Wallach Art Gallery, 1999), p. 86.

26 Frances Whitehead, "The Embedded Artist Project," The Embedded Artist Project, accessed July 30, 2015, <http://embeddedartistproject.com/whatdoartistsknow.html>. ( but Would like to quote it from the book)

Whitehead recounts a night she went to her garden in inner-city Chicago to hand pollinate night blooming *Lagenaria* gourds after reading that there were not enough pollinators in the city. To her astonishment, a sphinx moth had arrived before her, and at that moment,

Glimpsing that complexity that was outside self goes back to that notion of the loss of self and the need we have through art and other things to see something larger than ourselves. Stepping outside the burden of self happened for me in the garden.... [It] taught me that complexity is real, it is bigger than self it must be dealt with.<sup>27</sup>

Her goal is to create a cultural movement towards sustainability by using education, firsthand experience, and interaction, and, in her words, she believes this ethos “will make a new art, climate change/ culture change. But what is that new art? This has totally captured my imagination.”<sup>28</sup> How does one form an artistic practice that invokes complexity, collaborates with other creatures without further objectifying them? This moment in art history is contextualized by a growing zeitgeist towards ecological thinking in an era of ecological crises. These processes and presentations of work create the groundwork for a new ecological awareness based in the experiential rather than the exclusively scientific, and in the notion of dethroning the human perspective and instead imagining the perception of other beings.

The curatorial project by Sue Spaid *Green Acres: Artists Farming Fields, Greenhouses, and Abandoned Lots* pulls together a group of artists investigating diverse methodologies. The exhibit was originally shown at the Contemporary Arts Center in Cincinnati, and was locally exhibited at the Arlington Arts Center in Fall 2013. The experience of being in the

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<sup>27</sup> "Episode 25: Frances Whitehead," interview by Aengus Anderson, *The Conversation: In Search of the New Normal*, September 14, 2012, 39:00, <http://www.findtheconversation.com/episode-25-frances-whitehead/>.

<sup>28</sup> *Ibid.*, 36:12.

gallery added the elements of smell and atmosphere which are absent in the documentation photographs in the book, and which I think are so important to experiencing art that uses living things. However, after being in the gallery for a few months, the plants and trees looked unhealthy and not as well attended as they could have been. Such is the problem with utopian “agro-art.” Unless plants have an attentive and knowledgeable caretaker within the gallery, defoliating and slouching is inevitable. Although, no matter how proficient the caretaker, it is difficult to maintain healthy plants in an indoor gallery environment calibrated for the comfort of people.

The *Green Acres* catalog is a survey of artists over the past forty years that use different types of farming practices and strategies in their work. Some of the work is based in activism and advocates an environmentally conscious society. Mark Cooley, a professor at George Mason University, provokes a similar line of thinking as Whitehead when he states in his catalog essay, “Although an agri-Art provides a refreshing and welcomed alternative to the futurist and techno-fetishistic tendencies of much Bio-Art, we still might want to consider what it means to have arrived at a place in history where it can be considered radical high culture to plant a garden.”<sup>29</sup> Perhaps in an age of technological alienation, going “back-to-basics” is what it takes to point to the issues at hand, despite the risk of further alienating agricultural processes by bringing them into a gallery context. The work of Helen and Newton Harrison, Amy Franceschini and Future Farmers all function as a kind of eco-savvy land art meant to disrupt the everyday dependence on consumer food systems.

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29 Mark Cooley, “Agri-Art: The Death of Agri-Culture or Rise of Cooperatives?,” in *Green Acres: Artists Farming Fields, Greenhouses and Abandoned Lots*, by Sue Spaid (Cincinnati: Contemporary Art Center, 2012), p. 201.

Helen and Newton Harrison are an artist-architect-designer team that have been pioneers of “eco art” since before that was a term. The Harrisons continue to work as a husband and wife team today. Their collaborative practice began with their marriage and has since branched out to scientists, designers, and activists. Their work is directly concerned with environmental crises and offering possible solutions for them. Their earlier work of the 1970s focused more on urban farming and growing plants in gallery spaces, and were fundamental to opening the door to Bio-art. Beginning in 1968, they produced a series of *Survival Pieces*, which emerged from a reaction to industrialized farming practices and the resulting alienation from the land and food. Newton described how he came into the idea:

What’s Earth? It’s where everything grows. But I wanted to see for myself. So I got all kinds of shit, leaves, mulch, sewage, and some other stuff and started to shovel them. They smelled awful. But after a few months of shoveling and watering, the ‘earth’ smelled so good that you could smell it and taste it as the farmers do! That’s when we started to think like farmers and grow plants.<sup>30</sup>

Starting with a basic question, breaking it down, then seeing for oneself through an experiential process of production is a strategy oft employed by artists to answer those questions, often profoundly. In the *Green Acres* show, *Survival Piece #6, Upright Pastures* and *Survival Piece #6, Part 1, Flat Pastures* (1974/2012) were rebuilt and planted in the AAC galleries (fig. 5). A utopic designed grow light fixture was placed above living greens, herbs, and strawberries in the space. They sought to highlight the performed act of gardening or farming to bring attention to unsound ecological practices and to attempt to reconnect viewers with something they perceived as at risk of being forgotten. Although

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30 Linda Weintraub, *To Life!: Eco Art in Pursuit of a Sustainable Planet* (Berkeley and Los Angeles: University of California Press, 2012), p. 75.

the Harrisons eventually abandoned using living things in their work because of “ethical issues and ecological contradiction”<sup>31</sup> they began a conversation about humanity’s treatment of the earth and its implications of the future that bubbled up in the 1970s and are now gushing at a geyser roar.

Amy Franceschini is a founding member of the artist collective Futurefarmers. Her projects intersect with science and craft and often involve community outreach or education. According to their mission statement, the collective members of Futurefarmers

use various media to create work that has the potential to destabilize logics of ‘certainty’ ....Our work often provides a playful entry point and tools for participants to gain insight into deeper fields of inquiry- not only to imagine, but to participate in and initiate change in the places we live.<sup>32</sup>

In 2009, Franceschini staged a project called *Victory Gardens* in collaboration with San Francisco Museum of Modern Art in which she paid homage to San Francisco’s successful World War II Victory Garden program by reinventing it in the present day. She gave away three “free gardens” to families in different neighborhoods in the city and documented their progress. In the process, she invented new tools for the urban gardener: a “bike barrow” (fig. 6) and pogo stick shovel that were displayed in the museum.<sup>33</sup> In this instance, Franceschini utilizes gardening as a seemingly radical social proposal.

Futurefarmers’ more recent project *Tree University* (2013) was part of the exhibition “Walden Revisited” at Decordova Sculpture Park in Lincoln, MA, which is located near Henry David Thoreau’s famous home site (fig. 7). The project was designed around

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31 Ibid.

32 "About," Futurefarmers, <http://futurefarmers.com/#about>.

33 "Amy Franceschini on Victory Gardens," San Francisco Museum of Modern Art, 2011, <http://www.sfmoma.org/explore/multimedia/videos/263>.



the idea of a free school whose curriculum is based around a tree. A Norway spruce fell on the grounds and the artists decided to use it as their locus of exploration. They collaborated with local experts like an arborist and a microbial ecologist “to introduce us to the tree—to help us listen to the tree, taste and touch it.”<sup>34</sup> They sourced the materials from the area and hosted workshops on pencil making because Thoreau’s father owned a pencil factory. The pencils were then used to record what participants learned about the tree in the process. At the end of the project, Futurefarmers cut the tree into three parts to reflect Thoreau’s famous line, “I had three chairs in my house; one for solitude, two for friendship, three for society.”<sup>35</sup> Parts of the three pieces of the tree are embedded in the ground near the stump today and serve as a marker to the summer where the “getting to know” the tree took place. Futurefarmers’ projects are based on the basic human tenet of making, curiosity, and deconstruction in order to illustrate how it can make culture more productive and healthy for itself and the environment.

Ian Hamilton Finlay often is left out of environmental, land, or eco art surveys, perhaps because he examines the territory of the ornamental garden, rather than the fashionable urban vegetable garden. His work dwells in the realm of landscape design, or one could also say, in the making of worlds, which are aesthetic, intellectual, and numinous. Born to Scottish parents in the Bahamas in 1925, Finlay worked as a painter, printmaker, poet, artist, and gardener. He often used fragments of text, sometimes obscurely, sometimes whimsically, and sometimes profoundly, to reframe thinking about natural

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<sup>34</sup> Katie Anania, "500 Words: Amy Franceschini," *Artforum*, December 10, 2014, <http://artforum.com/words/id=49378>.

<sup>35</sup> Ibid.

objects in relation to words, history, and other artists and writers. *Tree-Shells* (1975) is a graphic green and black print of a tree, and underneath is the text: “TREE-SHELLS Instructions: Apply ear to Tree shell. Listen for Lakes” (fig. 8). Finlay offers a new way to consider the tree by giving instructions to understand it through touch. One could imagine the space inside the tree as a calm lake of xylem and phloem, much as once could imagine the expanse of the ocean within a seashell.

Finlay plays with language on *Wildflower Vase* (1985), which is a ceramic vase in the shape of a classical column with the opening for the flowers halfway through it. The base of the column reads “WILDFLOWER” (in red) “A MEAN TERM BETWEEN REVOLUTION AND VIRTUE” (in blue) (fig. 9). In the instance I saw the piece, there were two sprigs of yarrow flowers in the vase, delicate and small, though transformed in juxtaposition to the text. The fragmentary phrase transforms “wildflower,” an innocent generalization, a lowly term, both wild (revolution–unruly, tough, self reliant, pushing of boundaries) and flower (virtue–demure, beautiful, fragile). The flower is no longer just a flower, and our very idea of the thing itself is pre-formed by language, by our naming of it.

Finlay’s most extensive work was Little Sparta, his home in the countryside near Edinburgh where he made his art garden, or rather his garden as art. In his booklet *Nature Over Again, After Poussin* (1980), he printed the poem “Unconnected Sentences on Gardening,” in which he extrapolated that “gardening activity is of five kinds, namely, sowing, planting, fixing, placing, maintaining. In so far as gardening is an Art, all these may be taken under the one head, composing.”<sup>36</sup> Little Sparta was a whole work composed and

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36 Jessie Sheeler and Andrew Lawson, *Little Sparta: The Garden of Ian Hamilton Finlay* (London: Frances Lincoln, 2003), p. 17.

constantly in process. He saw in gardening a political or revolutionary potential, and in the same poem he wrote, “Garden centres must become the Jacobin Clubs of the new revolution.”<sup>37</sup> To Finlay, the garden was a force of culture that could push against norms. According to one of his scholars, John Dixon Hunt, gardens had the potential to “contrive a coherent, whole world; they could make palpable a preternatural nature; they are dialectical and transformative; they are experimental spaces; and, finally, all good gardens renew gardenist traditions for contemporary use and enjoyment.”<sup>38</sup> What is a garden, then? A place made up of trees, flowering plants, vegetables, bushes, grasses planted by a person(s). Finlay’s life challenged and augmented that definition into a markedly meaningful, textual, intellectual, creative, and political space.

I will highlight two pieces from the many at Little Sparta. One is a small grove of ten trees planted around a stone, with a dirt path cut through the grass leading to it (fig. 10).

The stone reads:

In a Sweet Harmony  
And Agreement  
With it self  
grove<sup>39</sup>

Visitors walking up the path can pause a moment on the text among the encompassing patch of trees. The origin of the word church, or kirk, is said to derive from the Latin for oak, *quercus*, which references the sacred groves where pagans and early Christians

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37 John Dixon Hunt, *Nature Over Again: The Garden Art of Ian Hamilton Finlay* (London: Reaktion, 2008), p. 39.

38 Ibid., 149

39 Ibid., 44.

worshipped.<sup>40</sup> Plants create spaces as they live in them, and humans are innately affected by their presence. Where there was once a continuous hillside, there now is a *place* initiated by Finlay, but made by the trees. The stone commemorates nothing; no event, no memorialized figure. Instead it marks the making of place, in the present and in the mind of the visitor.

A second piece in Little Sparta calls attention to the larger landscape, and any predispositions visitors have in viewing it. Next to one of the property's ponds sits a partial fence with the word "PICTURESQUE" engraved in white, so small you could miss it as you took in the reflections of the clouds on the water, the rolling hillside, and swaying trees (fig. 11). The fence itself references the history of the land in the boundaries for keeping livestock enclosed at the edge of water. Finlay states that "the inscription seems out of place in the modern garden. It jars on our secularism by suggesting the hierarchies of the world."<sup>41</sup> In the instance we spot the word on the fence, we catch ourselves. The line of thinking could go, "Yes, it is picturesque, on this sunny day. Do I favor this landscape above all others?" He calls into question the hierarchies in our viewing of the physical and material world. Is this garden an escape or a retreat from modernity? I think that to Finlay, the simple but affecting gesture is a critique of how we look at the garden and all our surroundings from afar. The reading causes the viewers to turn back in on themselves and question their perception and internal hierarchies.

To me, this work is more lasting and affecting than social practice art because of its invocation of mystery in nature alongside the history of Western civilization. His gardens

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40 T.F. Thiselton Dyer, *The Folk-Lore of Plants* (London: Chatto and Windus, 1889), p. 31.

41 Hunt, *Nature Over Again*, 52.

were conscious of aesthetic and compositional elements, but went beyond that to make something seemingly new in contemporary art. The fragmentary and spatial aspects of Little Sparta functioned as, in Hunt's terms, "ways of sharing or communicating those extraordinary human connections with processes beyond the lifespan and sometimes even the comprehension of a normal person."<sup>42</sup> Finlay created Little Sparta knowing it would literally outlive him. The trees would continue growing, the flowers would continue blooming and seeding, year after year until they died. Perhaps lichen would grow on the marble. The bronze sculptures might develop a worn patina, but they would not be locked in museum storage. He implicated humans in the natural space with works like the headstone engraved with "MAN/A PASSERBY" (fig. 12). It is meant to say, if the thing had a proverbial voice, "You! Yes, YOU, in the garden! Who are you? Why do you come here? What do you mean in relation to all this? Look!"

### 3. Out of the Garden, Into the Gallery

As plants and other living things appear in galleries, artist Mark Dion considers the museum as the arbiter of truth and the interpreter of the natural world. According to Dion, "the modernist cube... is an example of the denial of the biological contract. It is the environment without nature."<sup>43</sup> In his piece *Neukom Vivarium* (2006), he isolates the ecosystem of a fallen tree in a hot house in Seattle's Olympia Sculpture Park (fig. 13). He

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42 Ibid., 84.

43 Lisa G. Corrin et al., *Mark Dion* (London: Phaidon Press, 1997), p. 120.

employs the culture of display of natural history museums, and raises ethical questions by removing the tree and the organisms dependent upon it from their natural surroundings. The volunteers who maintain the tree go on regular expeditions to collect living samples to deposit in the Vivarium. What happens to this piece when examined through the perspective of the mycelium, ferns, and beetles? Do they know the difference? I argue that in some senses, they do, and the creation of the giant diorama speaks to pervasive alienation from the natural world, though it may tout educational benefits. The *Neukom Vivarium* will likely transform in meaning many times over as a permanent installation in the city.

Dion brings plants into the gallery on a smaller scale in *Mobile Bio Type-Jungle* (2002) (fig. 14). The piece is a portable greenhouse filled with tropical houseplants, the sides covered with blue painted tiles of animals, presumably those that might live in such a habitat. In this instance, he utilizes the language of the botanical garden glass conservatory or the natural history museum. The piece is a representation of the empirical body of knowledge of jungle environments. He uses the aesthetics of the specimen to isolate and categorize the innumerable components of an ecosystem, especially an exotic one.

Artist Sam Van Aken demonstrates the plasticity of fruit trees and the ingenuity of humans in learning, manipulating, and using that plasticity by grafting together forty types of fruits such as peaches, plums, and almonds in his *Tree of 40 Fruits* (2008).<sup>44</sup> The documentation of this tree looks like any ordinary photograph of a young fruit tree newly planted in yards and gardens. However, they are different because they were once displayed at the 2011 Armory Show tagged in small planters and surrounded by a

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<sup>44</sup> Sam Van Aken, *Tree of Forty Fruit*, accessed July 31, 2015, <http://www.treeof40fruit.com/>.

reflective material, presumably to ensure the trees received enough light during their stay (fig. 15). I am intrigued by the transmogrification that takes place when a seemingly every day object such as a tree is presented as fine art.

Contemporary French-born artist Camille Henrot employs a multidisciplinary practice involving histories, myths, “systems of knowledge,”<sup>45</sup> translations, and an ongoing ontological study of anthropology through the digital and physical. In her first major exhibition at the New Museum titled *Restless Earth* (2014), she presented video work, drawings, flower arrangements, and an herbarium. In *Is It Possible to be a Revolutionary and like Flowers?* (2012-2014), she worked with an expert in ikebana, the Japanese art of flower arranging, to interpret passages from books in her library by authors such as Henry David Thoreau, John Cage, Claude Levi-Strauss, Michel Foucault, and D.H. Lawrence, to name a few (fig. 16). The plant materials range from dried to fresh, exotic to ordinary. Each arrangement sits on the floor, is taped to the wall, or occupies a white ceramic vase with a simple didactic placard placed on its respective wall or plinth. The arrangements serve as a kind of physical translation to the texts, and “the material, economic, and political histories of individual flowers are used as the basis of the relationships created within each ikebana.”<sup>46</sup> The artist uses the names of the plants to inform the text and vice versa as she makes clear in her artist statement:

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45 Jacon Bromberg, "Camille Henrot: The Restless Earth," New Museum, 2014, , <http://www.newmuseum.org/exhibitions/view/camille-henrot>.

46 Gary Carrion-Murayari, "Camille Henrot: Unpacking the Library," in *Camille Henrot: The Restless Earth*, by Camille Henrot, Jimmie Durham, Arjun Appadurai, and Gary Carrion-Murayari (New York, NY: New Museum, 2014), p. 19.

The function of consoling and language – two aspects shared by books and flowers – are the starting point. So each piece of ikebana represents the works chosen by the artist following a principle of translation the rules of which have been reinvented, using the evocative power of the Latin and common names of the flowers, the names designed for their commercial exploitation, their pharmacological power or even the history of their travels.<sup>47</sup>

Henrot's use of plants in her work is unique in the way it uses an ordinary and recognizable thing to deepen the ideas of thinkers important to the formation of her practice and research. The specificity of the plants is important to the work itself. For example, the arrangement "*Discourse on Colonialism*," Aime Cesaire (2012) involves a tropical palm tree branch, (*Alma armata*) and a European tulip (*Tulip retroflexa*)<sup>48</sup>, to likely contrast Europe and its colonies. She takes into consideration the various human names, histories, and uses for the plants and connects them to a greater understanding of their history and meaning in her characteristic anthropologist-cum-artist role (fig. 17). The work expands the viewer's concept of how plants can be used to communicate using history, aesthetics, and literature.

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47 Camille Henrot, "Is It Possible to Be a Revolutionary and like Flowers?," Camille Henrot, accessed July 31, 2015, <http://www.camillehenrot.fr/en/work/61/is-it-possible-to-be-a-revolutionary-and-like-flowers>.

48 Ibid.



#### IV. Plants and Uexküll: Perception, Agency, Empathy, Science, and Magic

Come, and we will be silent for a while.  
Look at this rose on the corner of my desk:  
isn't the light around it just as timid  
as the light on you? It should not be here,  
it should have bloomed or faded in the garden,  
outside, never involved with me. But now  
it lives on in its small porcelain vase:  
what meaning does it find from my awareness?<sup>49</sup>

Many texts on nature-culture studies begin with a bleak picture of the environment. Akira Lippit writes in *Electric Animal* that “arguably, modernity has cost existence its diversity, has strained the earth’s capacity to maintain life. It is a cliché of modernity: human advancement always coincides with a recession of natures and its figures — wildlife, wilderness, human nature, and so forth.”<sup>50</sup> By bringing more attention to understanding the worlds of plants, a cultural change in ecological thinking might occur. Jakob von Uexküll’s seminal work *A Foray Into the Worlds of Animals and Humans* has experienced a resurgence in posthumanism since its publication in 1934 when it initiated a

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49 Rainer Maria Rilke, *The Selected Poetry of Rainer Maria Rilke*, trans. Stephen Mitchell (New York: Vintage Books, 1989), “Eight Elegy,” p. 77.

50 Akira Mizuta Lippit, *Electric Animal: Toward a Rhetoric of Wildlife* (Minneapolis: University of Minnesota Press, 2000), p. 1.

paradigm shift in understanding the perception of animals as not inherently inferior to our own, but instead, tuned to its environment based on its needs to survive. This is the animal's perceptual world, or its *umwelt*.<sup>51</sup> Things within the view of a subject take on meaning based on their use or significance within respective worlds, thus Uexküll extends subjectivity to the vast living world, including plants, though to a limit. According to plant studies philosopher Michael Marder, "if animals have suffered marginalization throughout the history of Western thought, then non-human, non-animal living beings, such as plants, have populated the margin of the margin, the zone of absolute obscurity undetectable on the radars of our conceptualities."<sup>52</sup> Uexküll's radical imaginative leap into the mind of the tick helped begin the transformation from anthropocentrism into posthumanism, and his limited writing on plants can be interpreted to inhabit worlds such as that of the animal. Building on Uexküll's work and in response to a worsening ecological picture, new understandings of subjectivity become necessary to enact an urgent shift in thinking about the human species' place in the environment. If humans are traditionally characterized as exceptional for their imagination and conceptual thinking, then we should use these abilities to envision non-hierarchical structures, similar to Deleuze and Guattari's rhizome<sup>53</sup> (fig. 18). Interpretations of science can enhance our understanding of the nonhuman, depending on flexibility in the search for hard evidence and data. Imaginative power must be applied here, as well. Expansion of scientific understanding of nature

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51 Uexküll, *Foray*, 2.

52 Michael Marder, *Plant-thinking: A Philosophy of Vegetal Life* (New York: Columbia University Press, 2013), p. 2.

53 Gilles Deleuze and Félix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia* (Minneapolis: University of Minnesota Press, 1987), p. 10-11.

expands our conceptualization of its complexity and thus its ultimate unknowability. In this unknowability arises a sense of magic, mystery, and the spiritual. Within all of these factors, plants, the vegetal beings that constitute a conceptualization of Nature, retain an agency in a “more-than-human world”<sup>54</sup> where they act and are acted upon.

Uexküll refutes the Cartesian machine theory which states that animals function as automata that react to stimuli, and in thinking this way, “one forgets that one has from the outset suppressed the principal factor, namely the *subject* who uses these aids, who affects and perceives with them.”<sup>55</sup> In this statement, he encourages the equalizing of the human and nonhuman and an overarching respect for life via an extension of subjectivity. To him, the role of the biologist was to take “into account that each and every living thing is a subject that lives in its own world, of which it is the center.”<sup>56</sup> Uexküll asks his readers to abandon the subject-object distinction and see nature as a network of acting, perceiving subjects in themselves. In his view, no animal perception was privileged over the other because “all animal subjects, from the simplest to the most complex are inserted into their environments to the same degree of perfection.”<sup>57</sup> His mission was one of decentering the human, and this scientific perceptual mission echoes Felix Guattari’s call for a new subjectivity in *The Three Ecologies*:

We need new social and aesthetic practices, new practices of the Self in relation to the other, to the foreign, the strange – a whole programme that seems far removed from current concerns. And yet, ultimately, we will only escape from the major

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54 Bennett, *Vibrant Matter*, 238.

55 Uexküll, *Foray*, 43.

56 *Ibid.*, 45.

57 *Ibid.*, 50.

crises of our era through the articulation of :

- a nascent subjectivity
- a constantly mutating socius
- an environment in the process of being reinvented.<sup>58</sup>

Guattari took the argument for new relations to the other and subjectivity by also applying it to the ecological and human social realm. Bennett's vital materialism extends this idea further into the ecological and actually encourages a surrender to anthropomorphism. The result is a folding in of the human and nonhuman so that "we at first may see only a world in our own image, but what appears next is a swarm of 'talented' and vibrant materialities (including the seeing self)."<sup>59</sup> Bennett places the human into the perception ecology, the human *umwelt* also becomes the working ability to empathically perceive the nonhuman others of our surroundings. Empathy is defined as the "the ability to understand and appreciate another person's feelings, experience, etc.,"<sup>60</sup> and perhaps a more Uexküllian definition would exclude the word "person" altogether. I invoke empathy here because of its link to the emotional and therefore irrational, which in turn connects it to anthropomorphizing that which is not human. In considering the "livingness" of the world, Lippit cites Arthur Schopenhauer's *The Indestructibility of Being*, in which he claims that all life is "that which cries, 'I, I, I want to exist' is not you alone; it is everything, absolutely everything that has the slightest trace of consciousness. So this desire in you is precisely that which is not individual but common to everything without exception."<sup>61</sup> By attributing

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58 Félix Guattari, *The Three Ecologies* (London: Athlone, 2000), p. 68.

59 Bennett, *Vibrant Matter*, 99.

60 OED s.v. "Empathy."

61 Lippit, *Electric Animal*, 36.

this desire for existence to everything, he therefore attributes it also to plant life as well, which might make one hesitate before ripping up a weed. Within this objective to build an equalizing understanding of the human and nonhuman, the subject and the object, we can find a particular challenge in what Marder calls “vegetal beings,”<sup>62</sup> or those who grow silently and seemingly still among us, spreading slowly, living and dying, in seasonal states between sleep and quiet frenzy in all directions.

Uexküll places plants in the background of his vibrant animal world. While he grants them subjectivity, as with the case of an oak tree in the chapter “The Same Subject as Object in Different Environments,”<sup>63</sup> he stops short of granting them agency within their worlds, or of having a world at all. Though his vision of animal worlds was radical at the time, it does become short sighted in his view of plants, and as Marder points out, “even his famous example of the blind and deaf tick, with a world of its own, highlights the predominance of vegetal functions—photosensitivity and thermosensitivity— in this animal.”<sup>64</sup> To Uexküll, plants appear to be subjective machines— an intermediary between subjective animal and objective automata. The wholly other form of the tree, with its absence of recognizable sensory anatomy (eyes, mouth, appendages), resists anthromorphization, and therefore empathic perception by humans, and as such, Uexküll (and many before and after him) dismisses its sensory abilities:

With plants, the reaction occurs according to the form and the order of the substances in its organs. We need only think of the drip grooves of the leaves or the starchy grains in the wheat kernel, which one can also include under the heading of

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62 Marder, *Plant-Thinking*, 3.

63 Uexküll, *Foray*, 126-132.

64 Marder, *Plant-Thinking*, 201n22.

potential energy. Of course, one leaves out the total figure of the plant, which owes its structure to the planned effects of the impulses of living cellular subjects. There are certainly no nerves or sense organs in plants, so that their whole existence seems to play itself out in an effect world.<sup>65</sup>

The form of the plant acts as an architectural function of its environment, seemingly oblivious to the forces that act upon it. The individual cells are given subjectivity, but he describes plants as passive creatures, immobile and constantly acted upon, yet not acting themselves. By taking as a fact that there are no sensing abilities in plants, he seems to be limiting the imaginative power of the biologist. Perhaps it is just that he was not yet equipped to support what could have been imagined with regard to the subject-agents that encompass nature.

Uexküll describes the life of the oak tree as perceived between itself, humans, animals, and insects. He begins the chapter by addressing the limits of knowledge: “Many problems still await being grasped intellectually, and others have not yet developed beyond the formulation of the question.”<sup>66</sup> It becomes apparent that his science is flexible, incomplete, and in constant flux. The question of plant perception had not yet formulated in his time. His study of the oak tree is reminiscent of an early lesson in ecology. A forester looks at the oak economically (fig. 19), and a little girl looks at it anthropomorphically (fig. 20), sees a face in the bark, and to her “the whole oak has become a dangerous demon.”<sup>67</sup> He describes a group of Russian workers who pray to a fungus on a tree that resembles a face, and then goes on to describe how a fox, owl, squirrel, beetle, and wasp might all

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65 Uexküll, Foray, 162.

66 Ibid., 126.

67 Ibid., 128

understand the oak differently according to their environmental needs (fig. 21, 22). For the animals and the forester, the tree serves practical and functional needs. For the child and the superstitious workers, the tree becomes something sinister, irrational, and otherworldly. Though the human perspective is not Uexküll's ultimate mission, this is a somewhat limiting view of the tree in the view of the human. To say a human's relationship to a tree can only be based on superstition or economy is restrictive. To view the human as an animal in its own right would offer a more equalizing perspective, one in which humans also enjoy resting in the shade of a tree, much like a fox, rather than to portray the species as a strictly suspicious, sacralizing, and capitalizing one.

In describing the functions of the oak in the *umwelten* of other creatures, Uexküll then does something radical by attributing subjectivity to the oak as an actor in its own environment. He touches on the complexity of the ecology within a single oak tree, and states that “these are only parts of a subject that is solidly put together in itself, which carries and shelters all environments—one which is never known by all the subjects of these environments and never knowable for them.”<sup>68</sup> Uexküll subscribes to a hierarchical structure of nature in which he relegates a pseudo-machine status to the oak, yet he hints at the idea of the tree having a *self* and the limits of scientific knowledge in explaining the complexity of the tree itself; a humbling thought. Admitting to *not knowing* is a human feat.

Understanding the sensory abilities in plants is an emerging science. In a 2013 article in *The New Yorker*, science writer Michael Pollan wrote about the emerging field of plant neurobiology whose “proponents believe that we must stop regarding plants as passive objects—the mute, immobile furniture of our world—and begin to treat them as

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68 Ibid., 132.

protagonists in their own dramas, highly skilled in the ways of contending in nature.”<sup>69</sup> Though met with resistance for ages by the scientific community, studies continue to emerge to reflect that plants are actors in their environments that make decisions, feel pain, learn, chemically communicate, and help their kin survive. Dr. Monica Gagliano, an Australian scientist, advocates that organisms do not need a central nervous system in order to learn and remember. She maintains that

Cognition is not a fixed ‘property’ of an organism but rather a dynamic ‘process’ of interactions in the organism–environment system. By viewing cognition as a natural biological phenomenon contributing to the persistence of organisms in constantly changing environments, it then makes sense to approach cognition in human as well as non-human others like plants.<sup>70</sup>

Gagliano’s work recognizes that plants have been neglected in the study of cognition, and her highlighting of environmental flux is undeniably Ueküllian. In addition to plant neurobiology, an also emerging “Critical Plant Studies” offers an open field from which to investigate plant life stripped of the burden of romanticism, idealization, and decoration. Biologist Edward O. Wilson recognized in his book *Biophilia* that “to the degree that we come to understand other organisms, we will place a greater value on them, and on ourselves.”<sup>71</sup> Science has a role in filling in the gaps of understanding, despite resistance to new modes of thinking about other creatures. With information and scientific papers more accessible to the public than ever, a cultural change is promising.

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69 Michael Pollan, "The Intelligent Plant," *The New Yorker*, May 06, 2015, <http://www.newyorker.com/magazine/2013/12/23/the-intelligent-plant>.

70 Monica Gagliano, "In a Green Frame of Mind: Perspectives on the Behavioural Ecology and Cognitive Nature of Plants," *AoB PLANTS* 7 (November 21, 2014): p. 3, accessed August 1, 2015, doi:10.1093/aobpla/plu075.

71 Edward O. Wilson, *Biophilia* (Cambridge, MA: Harvard University Press, 1984), p. 2.



Uexküll believed in close observation and experience and in immersing oneself into the environment which “offer[s] every nature lover new lands of such richness and beauty that a stroll through them will surely be rewarding, even though they are revealed only to our mind’s eye and not to our body’s.”<sup>72</sup> Uexküll advocates using observation and imagination to enter into the world of the other. By blending scientific knowledge with observational and imaginative powers, humans can “give up the futile attempt to disentangle the human from the nonhuman. Seek instead to engage more civilly, strategically, and subtly with the nonhumans in the assemblages in which you, too, participate.”<sup>73</sup> The observer is also the observed; the perceiving also the perceived.

What made Uexküll unique among scientists of his time was the way he found meaning in everything in nature. According to him, “All the organs of plants as well as of animals owe their form and their distribution of materials to their meaning as utilizers of the meaning factors which come to them from the outside. The question as to meaning must therefore have priority in all living beings.”<sup>74</sup> One could interpret the mechanisms of seed dispersal as meaningful within their ecosystem in relation to other creatures. For example, fruit trees have a meaningful evolutionary relationship to the animals that eat and spread their fruit. This relationship has an origin too ancient to precisely identify, and its meaning lies in its generosity and mystery. Anyone who has picked and tasted an apple from a wild tree knows this. Marder more eloquently describes this phenomena:

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72 Uexküll, *Foray*, 42.

73 Bennett, *Vibrant Matter*, 116.

74 Uexküll, *Foray*, 151

The gap separating humans from plants may dwindle—though not altogether disappear—thanks to the discovery of traces of the latter in the former, and vice versa (what kind of traces are these?) The human body and subjectivity alike are not pure expressions of Spirit but strange archives, surfaces of inscription for the vestiges of the inorganic world, of plant growth, and of animality—all of which survive and lead a clandestine afterlife in us, as us.<sup>75</sup>

Genes are constantly written and adapted as species interact in new and transforming ways. In ways that are at once mysterious and ungraspable, the tree is aware of the animal in such a way that over eons the two have evolved cooperatively—one feeds the other, one spreads seeds, both help continue the lives of the other. Each finds its own meaning in the other.

DNA and genetics come with the territory of the magical, mysterious, and unexplainable, though perhaps only to the non-expert majority (fig. 23). In Uexküll's chapter "Magical Environments," he speaks of the inborn path an unexplainable force that guides animals, which seems similar to instinct, though he never names it as such. He cites the migratory paths of birds, instances of fear and play, and the journey of a weevil out of a pea as examples of "magical" phenomena. Instead of declaring an absolute machine theory to explain these behaviors, Uexküll leaves it to magic, which implies a sense of wonder and other-worldly power in nature, one that is outside the control of the human realm. He holds an almost spiritual view of "all these different environments [which] are fostered and born along by the One that is inaccessible to all environments forever. Forever unknowable behind all of the worlds it produces, the subject— Nature— conceals itself."<sup>76</sup> By using the proper version of "One," he implies a godly force, which could be interpreted as just that,

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<sup>75</sup> Marder, *Plant-Thinking*, 10.

<sup>76</sup> Uexküll, *Foray*, 135.

God, or a genetic code that science had yet to discover fully. He suggests this again here: “If one wants to call meaningful only that which is given to the subject through the sense experience, then, of course, only the familiar path will be meaningful; the inborn path will not be. The inborn path will for that reason, however, be guided by a plan to the highest degree.”<sup>77</sup> The vagueness of the plan he refers to is palpable in both instances. The plan could be the life force that the ancient Greeks called *mana*, which according to Max Horkheimer and Theodor Adorno in *Dialectic of Enlightenment*, is the “primal and undifferentiated, it is everything unknown and alien; it is that which transcends the bounds of experience, the part of things which is more than their immediately perceived existence.”<sup>78</sup> The mysterious life force that causes the cry of “I, I, I want to exist” has captured the human imagination, and speculatively that of the animal as well, though we of course have no way of knowing how or in what capacity. David Abram is a philosopher working currently to bring the mythic into nature perception, and he attributes the imagination as “the way the senses themselves have of throwing themselves beyond what is immediately given, in order to make tentative contact with the other sides of things that we do not sense directly.”<sup>79</sup> In a world like that of the *mana*, of Uexküll and Abram, there is always more to know beyond the unknowable boundaries of nature, one of which is the life of plants. Uexküll’s magical environments create a field from which to constantly question

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77 Ibid., 124.

78 Max Horkheimer, Theodor W. Adorno, and Gunzelin Schmid Noerr, *Dialectic of Enlightenment: Philosophical Fragments* (Stanford, CA: Stanford University Press, 2007), p. 10.

79 David Abram, *The Spell of the Sensuous: Perception and Language in a More-than-human World* (New York: Pantheon Books, 1996), p. 58.

the nature of Nature and our perception of other perceptive worlds, each one retaining its own magic.

Humans worship, protect, genetically modify, destroy, grow, and eat plants: an array of actions so complex and contradictory that there is no succinct definition of what they are to us. They are the ultimate unknowable beings of the planet. They surround us, yet their being is shrouded in mystery. The magic described by Uexküll and others is one strategy for addressing the otherness of plants. An inherent subjective imaginative perception that utilizes objective science is a strategy humans can use to further their understanding of a wider and more complex view of Nature. In doing so, the possibility of a more empathic world arises that respects and looks in awe at the tiny and the unknowable, to the forces that are beyond our ultimate understanding. In the face of environmental degradation, humans might become humbled before the complexity of an agential nature and its multitudes of subjects, of which they are a part.

## V. Methodology

In addition to traditional research methods using the library, museums and site visits, I utilize research methods of a gardener, forager, naturalist, and homesteader. I gather this information from my experience on the farm in Maryland, through iPhone plant ID in the field, VCU biology lab, field guides, and through institutions like Lewis Ginter Botanical Garden, and mirroring this knowledge with philosophical and theoretical texts read independently and in seminar. There is an aspect to my practice that happens “in the field,” or the woods, where I collect specimens. I then use the studio as testing ground, where I grow, concoct, brew, and tend to my work, and learn from observation and experience over time. I transform the tiny space into one that can support life by paying attention to the temperature, humidity, and light needed to grow plants and mushrooms, amongst other things. The studio becomes a greenhouse, mushroom farm, fermentory, homestead, and lab. It is a place where the seasons are accounted for, but also altered (i.e. through growlights burning 12 hours a day in January, and through the HVAC system). I contextualize domestic, agricultural, and scientific processes within an art practice, which borders between “the wild” (i.e. behaviors of root systems, insects, water) and the control of propagation and containment. In an exhibition, there is a takeaway that serves to educate or expand the surrounding environment in the form of mead, soap, or seeds.

## 1. Mead Sound

One enjoys [mead] and then forgets it, which is a pity, when it used to signify so much that is also now forgotten. Perhaps the gods really are dead.<sup>80</sup>

In the time working toward my thesis, projects that engage transformational processes define my inquiry into nonhuman entities in art. Before coming to school, I started homebrewing from foraged fruits and herbs from the farm in Maryland. The first experiment was with honey and wild persimmons, and it transformed into something delicious, effervescent, and alcoholic. It was magic. Wide eyed, I'd listen to the gentle popping of the wild yeasts at work in the bottle as it released its carbon dioxide, the byproduct of yeast digestion, along with ethanol, through the airlock topper. How could this process be amplified, brought out of the subtle observation and into a more envisioned cacophony of attention?

My attraction to home-ec, grandmotherly, or "homesteading" skills comes from a need that was unattended throughout my algebra laden, privileged and careerist grade school experience. While I was being trained to be an employee, something was lost within a system in which all needs and wants are accessible and exchangeable. In an essay titled "Our Revisionist Nostalgia," Claire Balesteir defines this phenomena:

It could be that our retrospective attachments function as security measures, structural reinforcements... Maybe we're a generation in the midst of a tribal reawakening; our parents grew up in the apex of a patriotic, homogeneous America, and now we want to examine the parts of the whole.<sup>81</sup>

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<sup>80</sup> Maguelonne Toussaint-Samat, *A History of Food* (Chichester, West Sussex, U.K.: Wiley-Blackwell, 2009), p. 37.

When our grandparents die, there may be no one left to ask but Google. I sought to make a piece from the wonderment of the process, of the microbes at work. I purchased honey from Kroger and used a mix of bottled and Pollak building water because the chlorine in city drinking water can hinder the yeasts. The process requires boiling four gallons of water and honey, letting it cool to body temperature, and then stirring in Red Star champagne yeast. The mixture is then poured into a ceramic crock and ferments in the open air for five days or so. I then poured it into eight half gallon jugs fitted with water airlocks, which release air, but do not let it back in. They were stacked on a wood box shelf along with a fermentation crock fitted with a contact microphone to record the bubbly yeast respiration. The airlocks were then fitted with clip on microphones, plugged into a mixer and speakers. The mead creates a rhythmic popping sound, which varies in frequency depending on temperature and stage of fermentation and amount of sugars available for consumption. The sounds mimic other life processes- heartbeats, breathing, and even the rhythmic sounds of animals like frogs and crickets at night. *Mead Sound* traced the transformation over time in a much more subtle way that would not be measurable immediately (fig. 24). Over a few months, the fermentation process slowed as the yeasts consumed all the sugar, and the bubbles occur at longer intervals with less force.

The mead's studio life continued when imbibed with friends and colleagues throughout its process of racking and finishing. I bottled it and exchanged it for a small donation to Sediment Arts at the Candidacy show, at which point it was very potent and

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81 Courtney Balesteir, "Our Revisionist Nostalgia," Oxford American, April 2013, <http://www.oxfordamerican.org/articles/2013/apr/16/our-revisionist-nostalgia/>.

sweet. I still have three gallons fermenting in my studio since Fall 2014, waiting to be bottled for a celebration of the end of graduate school.

## 2. Mushrooms

In my first year, I continued by working with mushrooms and photographic processes. My process began by walking in woods and fields in Maryland and Virginia where I collect mushrooms which vary by season and circumstance. Traditionally, spore prints on paper are used to aid identification. However, the prints, which are often beautiful, are also impermanent. A light breeze blows them away. I use photographic processes in order to create permanent representations of the life cycles of various fungi which are inherently mysterious, ephemeral, and ecologically essential. To make the photograms, I leave a mushroom cap on silver gelatin paper for a few hours to a few days. In that time, the spores are all released, the eggs inside hatch into fly larva, and the cap disintegrates, often creating a radiating effect. In the darkroom, I expose the paper to light, develop the print, and let the remains of the mushroom wash away. I came upon the bright orange Jack O' Lantern mushroom by accident. I picked a few while on a hike, took them into the darkroom, and when I looked at them in the dark, they were glowing. I then placed them on 4x5 negative color film overnight (fig. 25). The green bioluminescence of the mushroom's gills exposes the film.

Oyster mushrooms are key players in recycling and mycoremediation, the process of removing toxins and contaminants from soil via mushrooms. They are edible and very common in the wild. For the tripod piece, I shredded the test strips from the large digital prints made for the show and mixed them with oyster growing medium. Using materials



sourced from my studio, such as the tripod and fishing line, I suspended the bag, which gradually turned white as the mycelium, the fungi's vegetative branching network of filaments, grows within as it consumes the paper. Photography's processes and materials inform this work, and I am interested in its alchemical nature when acted upon by living things. A photograph hardly distills the incredible systems that form mushrooms and sustain the life inside them, so I sought to re-form the delight of coming upon something on the forest floor that is completely new and strange through these processes. The prints create a trace of the experience, rather than a facsimile.

In the summer, the oyster spawn built its network of branching mycelia throughout the wood chips and shredded inkjet paper test strips and fed on it enough to fruit cream colored oyster mushrooms (fig. 26). The energy in the photo paper was transferred via the fungi to create a new piece in which the spores emitted by the mushroom created marks on black velvet, reading "The Latent Image," an obvious reference to the photographic process from which it came (fig. 27). The spores themselves burn the inside of my nose, and overnight can cover everything in my studio with a thin white dusting. Sitting and watched the swirling cloud of white emit from the gills reminded me of the forces that cannot be explained, but are a wonder to enable and then witness from the beginning to their end. After the mushrooms were done fruiting for the third time, I put the ball of mycelium and paper in my community garden bed, where it is slowly being nibbled away by slugs and potato bugs and made digestible for the herbs and vegetables in the garden.

### 3. Candidacy Show

My candidacy show centered around two pieces: the Hut, and a River Soap Wash Station. The semester long research leading up to the show centered on investigating homesteading and utopian ideals from the Back-to-the-Land movement of the 1970s to the present culture of artisanal everything and the desire for self sufficiency in uncertain times, both born out of environmentalism.

Making soap is a chemical process similar to cooking or alchemy in which fat, water, and lye react and bond over time. In this instance, a *River Soap Wash Station* station was assembled of natural materials and found garbage. A large block of soap was created from Monocacy River water, lye, soil, wildflowers, cider gum leaves, grass. I sought to create a dialogue about hygiene, environment, place, and participation through the act of washing one's hands in the gallery (fig. 28). I stuffed the spaces between the river trash in the tire with compost, in which seeds from food scraps were germinating beside plastic fruit stickers, suggesting both the continual and terminal cycles of decomposition and generation. I hope to elicit the absurdity of a system that produces millions of tons of products (plastics, metals) that do not decompose organically and are marginally recycled. The river is a natural collector of trash and pollutants, and this piece asks viewers to make intimate contact with all that a river embodies.

The *Hut* is a 1 degree geodesic dome assembled in the gallery space at Sediment Arts in Richmond (fig. 29). It is built out of cedar planks and sod, and visitors can enter inside and listen to the sounds of birds and frogs on two sets of headphone. The installation tapped into a collective memory of the feeling and smell of grass, the songs of birds in the morning, and the sounds of frogs at night in spring. In incorporating the sound and sensory

elements, I hoped to evoke those memories, and also provide a space to consider these phenomena, where they exist and where they are absent in our environment.

The work blended both a utopic vision of living off the land, and also made room for the discontents of human production and existence, namely garbage. The candidacy installation left me with questions: Is it possible to be in harmony with environment at all now, as a human being that is constantly consuming and producing waste? Or rather, what does it mean to be a person in the environment? Can we improve the health of our communities, ecosystems, and selves through an ideological shift in how we position ourselves within the natural world, even when it becomes increasingly invisible within our wider daily awareness? What role can art have in that shift?

#### 4. A Word on the Onion

In fall of 2013, I began a sprouting garden and experimenting with installing plants that can live for a time on just water in glass vases mounted to the wall. One of these plants was a grocery store onion. Part of my research inevitably led me to Jainism, whose most hardline practitioners will not eat bulbs or roots because it ends the life of the plant. How long can an onion live? Why keep it alive in the first place? My onion knowledge is amateur. I sprouted it in the studio, and when the bulb was mostly gone, used as energy for the foliage and root growth, I planted it in my garden plot. The next season, it had grown two bulbs. I pulled them out, and re-sprouted them again, documenting it in a long term lumen print, which changes with the plant over time. I split them up and planted one in the garden again, and one in my studio. The studio onion died of my long-term neglect, and garden onion sprouted a healthy stalk, flower, and as of August 2015, seeds. How long can this

cycle go on? I do not know, and in that unknowing, I am glad. Is the ethic of the Jains worthy of contemplation in an age of factory farming and monocultures? What is the value of the life of an onion? Should not a thing that strives to regenerate itself year after year garner respect or a certain degree of wonderment?

## VI. Dispersal: Thesis Exhibition

When writing about the work, it seems appropriate to describe its making chronologically as each work was made with consideration of the seasons, especially when making work about beings whose survival and genetics must be synced with their geography and time. However, the artificial academic schedule has little to do with the growing of plants, and one must manipulate their environment to make an ideal environment for art plant growth based on an exhibition schedule, as opposed to outdoor temperature, watering, and daylight hours. The studio became my greenhouse and lab. I did my gathering with the seasons. The ginkgo, paw paws, and persimmons I collected in the fall, and the dry seed heads in January. The refrigerator acted as an early overwintering for the seeds, and the fluorescent grow lights created twelve hours of May daylight in the dead of winter. Video functioned as the ultimate botanical preservation. The exhibition took place at the Depot Gallery on W. Broad St, in a space adjacent to the large storefront window (fig. 30, 31). Five LED screens were framed in eastern red cedar, a fragrant and beautiful wood, and played colorful video loops. A large cedar planter filled with grasses and various found weeds faced the incoming light from the window, and the plants shifted and swayed beneath the air vents above. In building the installation, I sought to blend the cold digital with the warm living element of green plants. The actions in the videos

themselves are phenomenological, and I wanted to offer that experience to viewers upon entering the space.

1. *Actions For Knowing a Pelargonium*. HD video, 6:24 minutes

In *Actions for Knowing a Pelargonium*, I hired three people from Craigslist to participate in a video project (fig. 32). The ad was placed in the talent section and specifically sought people who knew little about plants. *Pelargonium graveolens*, or scented geranium, is a plant that originates from southern Africa that has aromatic leaves which are intensively farmed for the perfume industry. The hybrids found in plant shops today have been bred to mimic the smells of roses, chocolate, peppermint, lemon, and more. The plant in the video is a rose geranium, and upon contact with the leaves, it releases a distinct floral aroma.

The video is split into three channels; a young man in a brown hoodie, a middle aged woman in a red turtleneck, and a college aged woman with straight brown hair and glasses. They interpret and perform recorded instructions playing as the video records. Their actions are then synced until the end when they are asked to interact with the plant any way they choose and to be creative. Some are rough, some are gentle, some conventional. There is a tension between roughness and gentleness that calls into question whether anyone should be touching the thing in the first place and that it would likely be better off unmolested.

The intention with the piece was to introduce the person to the plant and to give them an experience outside of their everyday. I first became aware of scented geraniums through a 12 year old plant belonging to a colleague at Lewis Ginter Botanical Garden that

sits in my office window in the winter months. I'll turn in my swivel chair and brush it and my whole desk area smells like flowers. The plant is a gift. I am interested in how these discoveries are made at different points in our lives. In 2012, I visited the San Diego Botanical Garden, and there was a small, nondescript plaque near some lavender that read "TOUCH AND SMELL PLANTS, RUB A LEAF BETWEEN YOUR FINGERS, SMELL THE FRAGRANCE OF EACH HERB" (fig. 33) These are direct instructions to encourage a phenomenological interaction with individual plants. My hope was that the people in the video discover this unique feature of the plant within the set of instructions. Visitors to the show can then touch the leaves of the same plant themselves nearby. Because the actions are isolated in a video resembling the documentation of a controlled psychological study, it offers up the human-plant interaction for singular observation.

2. *Animal to Plant, Plant to Animal (Burdock)*. HD video, 4:00.

Hanging to the right of the Pelargonium, a vertical framed screen hangs almost down to the ground. It is a fixed image of a taped together bundle of post senescent (dead, with seeds) burdock plants. Burdock is a native plant which is often found in "waste sites," a term often used in field guide terminology. This particular plant came from a small gully next to a pond bordering a conventional corn-soybean field. This ditch hosts a surprising diversity of plant species despite the herbicide runoff it surely experiences in the spring. People with dogs know burdock best for its pesky burs that attach ingeniously to hair, and those with an interest in natural medicine know it for its root which is a purifying panacea. In my work, I am interested in deliberately interacting with plants we avoid, such as stinging nettle or burdock, and in doing so, hope to make discoveries about those

interactions and reactions and draw meaning from them. In the case of my performance with the burdock, I brought human animality to the forefront. I enter the frame from above on both sides, letting my hair hang and catch the burs until I have absorbed nearly all of them into my hair (fig. 34). All in all, it was a highly unpleasant experience, and I now truly appreciate the evolutionary function of these plants in which they so effectively have spread themselves. Not only do the larger hooks on the burs' surface hook into hair and each other, they have smaller, miniscule hairs that hook into skin as well. It is an example of a potentially meaningful evolutionary adaptation. In order to seed itself, it produces the nickel sized burs (see the origin myth of Velcro®), which cling to hair and skin with an uncanny ability. In attaching to hair, the animal in question must pick or chew them out, and in the process, they tear apart the outer hooks and release the many seeds inside. How did this happen? A scientist will give one explanation, a mystic another, an artist yet another. In the myriad of human cosmologies, what stories can we create and pass on to explain such intelligences? Don't plants have to have some elemental understanding of their unrooted, belegged brethren to *know* this interactive hitchhiking? Such knowing has occurred over an unfathomable stretch of time, and I think that is where the plant world claims its agency in a human world.

3. *Touch, Burn, Water: Mimosa pudica Polygraph Test (For Sir Jagadish Chandra Bose and Cleve Baxter)*. Thermal Paper. 8x23 in

This piece is a trace of a pseudo-scientific analog polygraph test, performed twice on two different *Mimosa pudica* plants on a Lafayette Mini-Graph, with similar results.

Mimosas are native to South America, but have spread around the tropical regions of the



world. They are one of the few known plants to move at a timescale we can immediately discern. They react to touch, and have historically been used in botanical experiments to demonstrate the aliveness of plants. They are highlighted in Christopher Bird and Peter Tompkins' *The Secret Life of Plants*<sup>82</sup>, which looked at the work of 19<sup>th</sup> century Indian scientist Sir Jagadish Chandra Bose (1858-1937) and the lie detector expert Cleve Backster (1924-2013), who performed tests on his houseplants. Bose ran graphed tests on machines of his own making on *Mimosa pudica*. I was very influenced by the illustrations of his tests (fig. 35, 36) in his 1927 publication *Plant Autographs and Their Revelations*, where he wrote of the mimosa, "Is it any wonder that we should be fascinated by such a lively display of movement in a plant?"<sup>83</sup> My version of the plant autograph demonstrated three actions that are often used to demonstrate the movement of the mimosa's leaves in Youtube videos: touching, burning, and watering; all of which elicit unique reactions on the polygraph test. The three actions are discernable in the framed piece of thermal paper for the show, which was presented like a drawing, or an autograph. The piece uses the model of a scientific test and the language of a drawing on blank white paper (fig. 37). It is rendered mysterious, a quality generally unacceptable in the scientific method. Though I do not know exactly what the machine is measuring, it is certainly measuring *something*, and the fact that the plant is clearly disturbed and harmed by this encounter elicited a compassion and guilt I had not yet experienced toward a vegetal being. The plant was feeling.

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82 Peter Tompkins and Christopher Bird, *The Secret Life of Plants* (New York: Harper & Row, 1973), p. 82-103, 3-19.

83 Jagadis Chandra Bose, *Plant Autographs and Their Revelations* (Calcutta: Bose Institute, 1955), p. 7.

When I think of myself as an actor in the world amongst other actors, sizing my own actions and comportment up to that of others', I realize my own human ability to control and manipulate my surroundings in order to enable my wellbeing, physically and socially. When reflecting on our own human power over the world, we ought to also consider the power of plants such as Jimson Weed or Poison Hemlock. These poisonous plants are ubiquitous, and when one thinks of their power on the bodies of mammals, they become frankly frightening. Is it coincidence that Jimson Weed has toxins that can render humans and animals completely unconscious and unremembering, but still walking and talking and hallucinating, or that Poison Hemlock can kill someone in a few hours? Yet, it is also food for the butterflies and moths that depend on it. Is it a chemical coincidence that these particular plants developed these compounds that can destroy us? Or is it something deliberate over time, an agential decision several millions of years in the making?

4. *Richmond Seedlings*, porcelain, acrylic, dirt, seedling, 4x10-14 in.

Sitting on the windowsill facing West Broad Street and the southern exposure, three oblong white porcelain pots sit with seedlings growing from them. Each seedling came from a seed I collected, stratified, and germinated in Richmond, Virginia. The following text is written in black on each pot with the corresponding tree (fig. 38, 39, 40):

**GINKGO BILOBA  
(N. HARRISON ST)**

EXTANT TAXON—SOLE SURVIVOR  
SAVED BY MONKS  
SPREAD BY URBAN PLANNERS  
AND GRAY SQUIRRELS

**OSAGE ORANGE  
(BELLE ISLE)**

ONCE ENJOYED  
BY GIANT  
GROUND SLOTHS

**AMERICAN PERSIMMON  
(TEXAS BEACH)**

PEOPLE, POSSUMS, MOLDS,  
DEER, YEASTS, RACCOONS  
FIND THE FRUIT  
DELICIOUS

Inspired by the poems of John Cage and Finlay's use of text, each small poem is meant to connect the name, life, and recent and distant history of each tree to the everyday and the city outside.

5. *Norfolk Island Pine*, HD video, 2:09 loop.

In the video of the Norfolk Island pine in the green room, I take that mimicry a step further and incorporate notions of mythology, anthropomorphism, and perhaps dendrolatry (fig. 41). I crouch largely unseen behind the person-sized tree, and rise up as if part of it, branches draping arms. I stand fixed with the tree for about two minutes, and then disappear once more behind it. In John Fowles' meditation on nature and creativity in *The Tree*, he introduces the green man, who

possesses the characteristic of elusiveness, a power of 'melting' into the trees...This notion of the green man- or green woman...seen as emblem of the close connection between the actuality of present consciousness (not least in its habitual flight into a mental greenwood) and what science has censored in man's attitude to nature- that is, the 'wild' side, the inner feeling as opposed to the outer, fact-bound, conforming face imposed by fashion.<sup>84</sup>

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84 John Fowles, *The Tree* (New York: Ecco Press, 1983), p. 38.

In the video, I become the green woman, reflecting the mythology into the likeness of form between my body and tree. Arms become branches and branches arms (fig. 42). The illusion requires the viewer's willingness to imagine the transformation to completion through the simple gesture in the video. Perception is as varied as the number of individuals in the world and informed by one another, and the relationship between subject and object is ongoing and fluid. The gesture illustrates the undeniable connection and hunger to be in a the green space, further exaggerated by the lurid hue of the green screen room. A sense of magic is created between human and tree in the creation of a moving image.

6. *Dirt Time, Plant Thinking*. Eastern red cedar, soil, found seeds, LCD monitor, media player, HD video

*Plants used:* Broadleaf dock, stinging nettle, common tansy, cocklebur, burdock, Queen Anne's lace, milkweed, broomsedge, deertongue, Osage orange, and others.

*Dirt Time, Plant Thinking* was a meditation on weeds, and on fully participating in the phenomenology of plant life that could be considered wild, useless, invasive, or detrimental (fig. 43). When growing plants, I often think of Wendell Berry who wrote about growing vegetables how "you will appreciate it fully, having known it all its life."<sup>85</sup> The seeds grown in the planter were collected in a field and planted in the studio in January. They grew under fluorescent grow lights until April. This kind of intimacy and attention to that which is seemingly tiny, insignificant, and puny against our own intellect and strength

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<sup>85</sup> Wendell Berry and Norman Wirzba, "The Pleasures of Eating," in *The Art of the Commonplace: Agrarian Essays of Wendell Berry* (Washington, D.C.: Counterpoint, 2002), p. 325.

is an exercise in understanding the line between, through, and around the human and vegetal.

The piece consisted of a 5'x2' red cedar planter box, filled with soil and verdant greenery that frames a small 19 inch wide LED screen. A minute long video loop relays traces and estimations of the experience of the plants lifetime including images of the sun, stages of growth, and their journey by pick up truck from the Pollak Building to the Depot Gallery. At night, a green glow slowly pulses on the screen and illuminates the plants in the gallery window. The piece serves as a locus for the video elements in the show, as a way to ground the digital images into the real and the living.

7. *Seeding Spirit*. HD Video, 2:37.

The *Seeding Spirit* consisted of a suit that transported the wearer to a literal becoming of the landscape in late winter, which is largely made of dormant or post senescent plants (fig. 44). The plant material was collected around the same time and place as the plants used in *Dirt Time*, *Plant Thinking*. In the video, the seed spirit figure sways and shakes in the wind, dislodging and dispersing seeds across the bare landscape. I employed an animistic mode of thinking to imagine what a plant spirit might look like. The video itself is performative, and the wearer feels, smells, and recognizes the power of plants to reproduce themselves.

8. *Touch-me-not/sensitive plant/shame plant/prayer plant/humble plant/Mimosa pudica*. HD video, 1:50 loop

In the video, an ambiguously sized *Mimosa pudica* plant sits still on a yellow backdrop (fig. 45). Hands enter the frame one by one and gently stroke its leaves, which collapse and close to the touch. When all the hands have touched the leaves, all four reemerge from the frame and begin on onslaught of touching until the plant is entirely withdrawn into itself. The action is an aestheticized and choreographed demonstration made to evoke the anthropomorphic folk names of the plant.

## VII. Conclusion

While navigating this verdant territory, the lines between nature-culture, human-nonhuman, and subject-object have served as the investigative boundaries in the process of research and making. An art practice offers the researcher-maker a unique position dispersed across disciplines and roles in which to search for answers. By collaborating with nonhuman actors in the studio, artists can create new forms of knowledge through a process of integrative and phenomenological practices. When employed, they create expansive modes of thinking beyond the confines of disciplinarity. One hopes this will create lasting and positive impacts on world affairs, even if it is only felt on an individual scale, like the shade of the oak tree in July.

Reader, when you smell the flowers of the Callery pear tree in spring, feel the itch of poison ivy, or see the mimosa trees sleeping in the evening, I hope you think of this paper.

## Figures



Fig. 46: John Cage, *Child of Tree*, 1957.



Fig. 47: Alison Knowles, *Bean Rolls*, 1963.



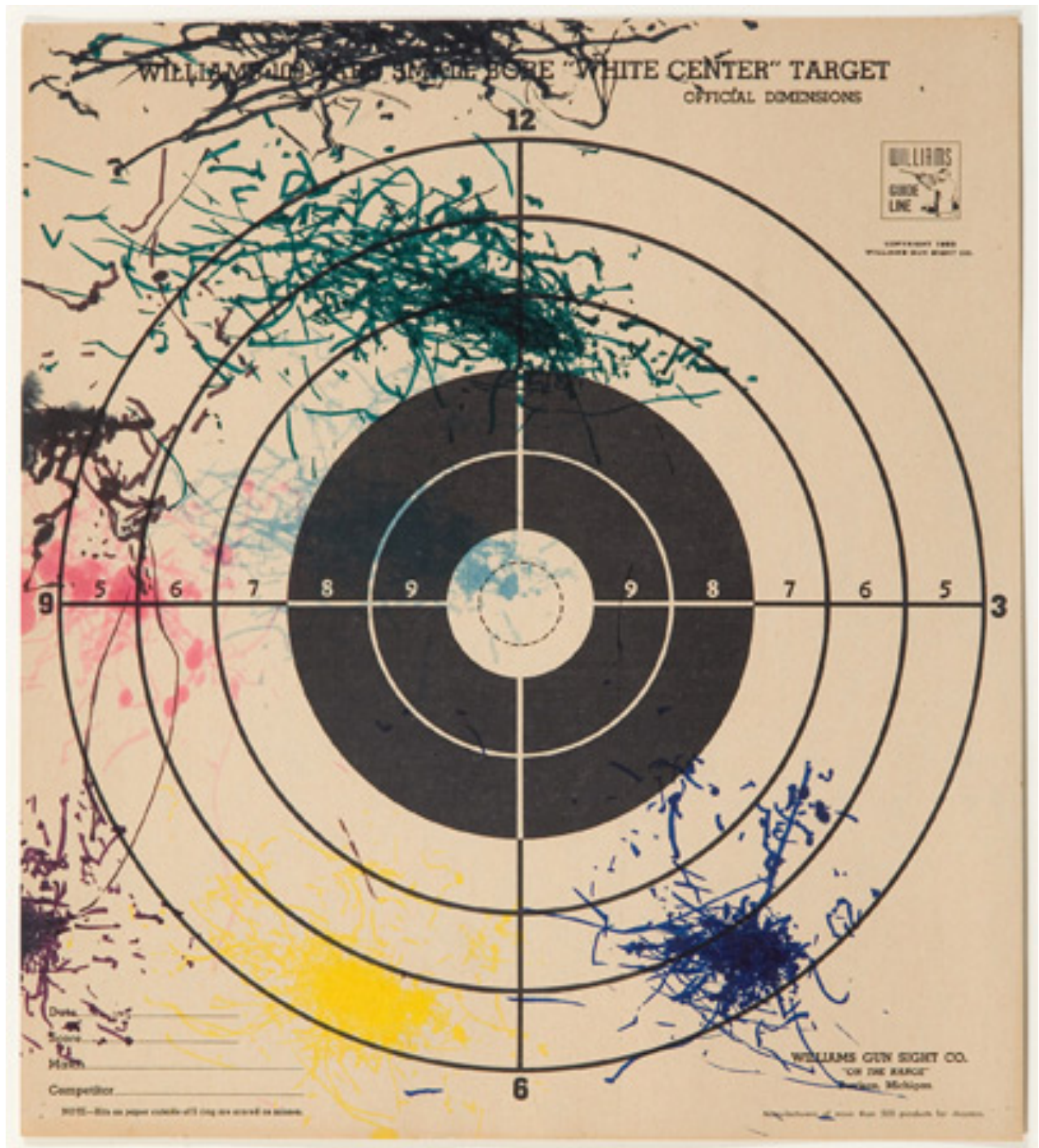


Fig. 48: Robert Watts, Untitled (from the series "Tree Wind Paintings"), 1983-4.



### ***What do Artists Know?***

***Beyond a wide range of material practices, histories and techniques, concepts and theoretical frameworks, artists are trained to use a unique set of skills, process, and methodologies. These include:***

- ❑ Synthesizing diverse facts, goals, and references – making connections and speaking many “languages”. Artists are very “lateral” in their research and operations and have great intellectual and operational agility.
- ❑ Production of new knowledge as evidenced by the 100+ year history of innovation and originality as a *top criterion*
- ❑ Creative, in-process problem solving and ongoing processes, not all up-front creativity: responsiveness.
- ❑ Artists compose *and* perform, initiate *and* carry-thru, design *and* execute. This creates a relatively tight “feedback loop” in their process.
- ❑ Pro-active not re-active practice: artists are trained to initiate, re-direct the brief, and consider their intentionality.
- ❑ Acute cognizance of individual responsibility for the meanings, ramifications and consequences of their work. (The down side of this is that artists are not always team-oriented or willing to compromise due to the high premium placed on individual responsibility and sole authorship.)
- ❑ Understanding of the language of cultural values and how they are embodied and represented – re-valuation and re-contextualization.
- ❑ Participation and maneuvering in non-compensation (social) economies, idea economies, and other intangible values (capital).
- ❑ Proficiency in evaluation and analysis along multiple-criteria -- qualitative lines, qualitative assessment. Many are skilled in pattern and system recognition, especially with asymmetrical data.
- ❑ Making explicit the implicit -- making visible the invisible.
- ❑ Artists do not think outside the box-- *there is no box.*

Frances Whitehead 2006 ©

Fig. 49: Frances Whitehead, *What Do Artists Know?*, PDF, 2006.



Fig. 50: Helen and Newton Harrison, *Survival Piece #6, Upright Pastures* and *Survival Piece #6, Part 1, Flat Pastures* at Arlington Art Center, 1974/2013.



Fig. 51: Amy Franceschini, *Bike Barrow*, 2009.



Fig. 52: Futurefarmers, *Tree University* at Decordova Sculpture Park, 2013.



Fig. 53: Ian Hamilton Finlay, *Tree-Shells*, 1975.



Fig. 54: Ian Hamilton Finlay, *Wildflower Vase*, 1985.



Fig. 55: Ian Hamilton Finlay, *Little Sparta*, grove.



Fig. 56: Ian Hamilton Finlay, Little Sparta, "PICTURESQUE" fence.



Fig. 57: Ian Hamilton Finlay, Little Sparta, "MAN/A PASSERBY."



Fig. 58: Mark Dion, *Neukom Vivarium*, 2006.



Fig. 59: Mark Dion, *Mobile Bio Type-Jungle*, 2002.



Fig. 60: Sam Van Aken, *Tree of Forty Fruit*, 2011.



Fig. 61: Camille Henrot, *Is It Possible to be a Revolutionary and Like Flowers?*, New Museum, 2014.





Fig. 62: Camille Henrot, "Discourse on Colonialism," Aime Cesaire, 2012.



Fig. 63: Internet meme, author unknown.



Fig. 64: Jakob von Uexküll, *Forester and Oak*.

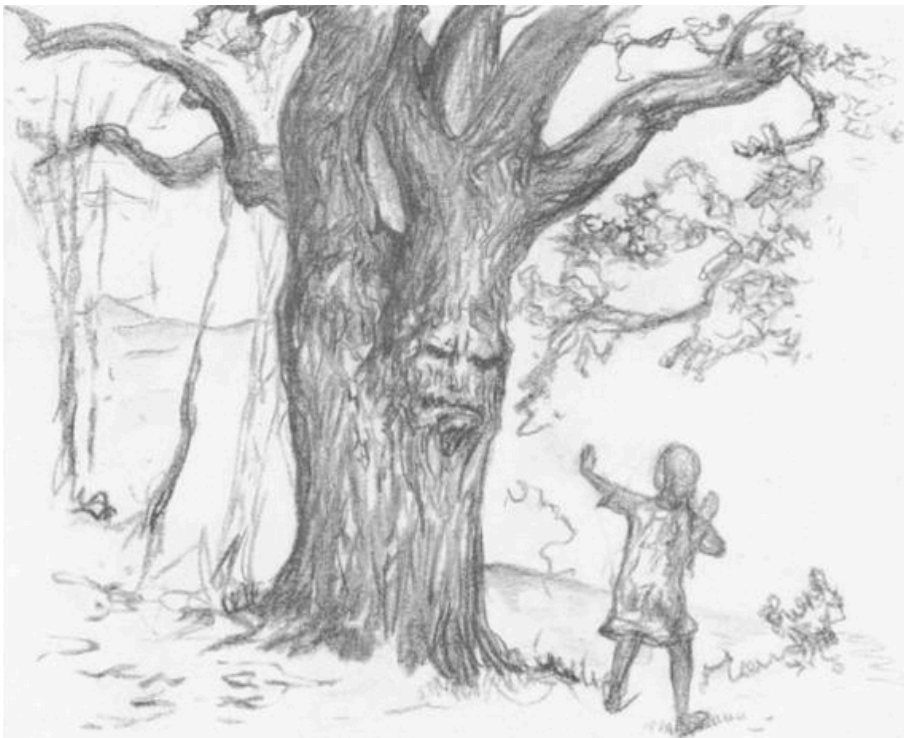


Fig. 65: Jakob von Uexküll, *Girl and Oak*



Fig. 66: Jakob von Uexküll, *Fox and Oak*.

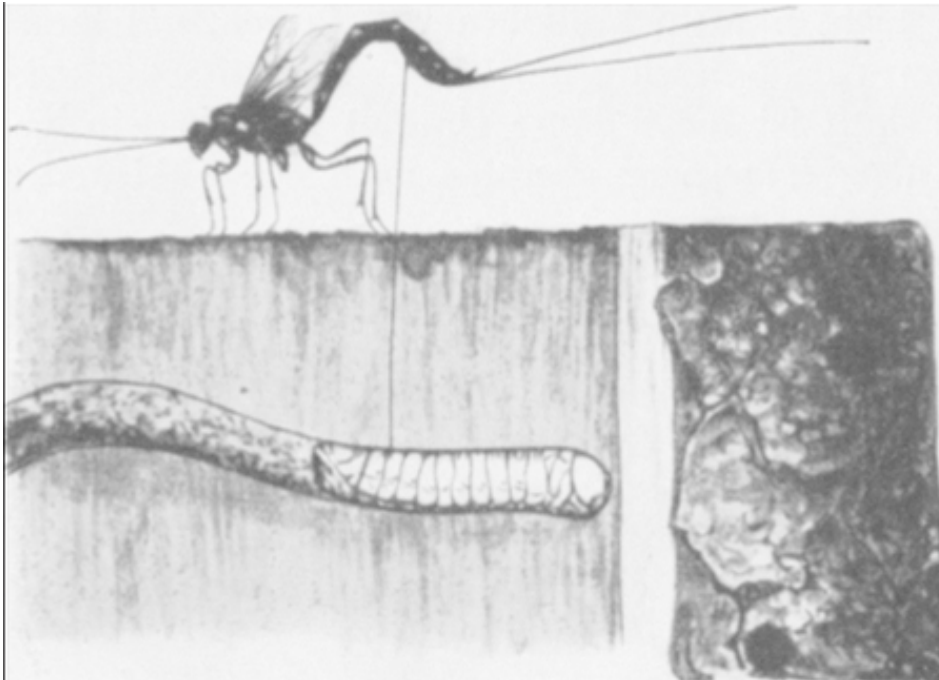


Fig. 67: Jakob von Uexküll, *Ichneumon Wasp and Oak*.

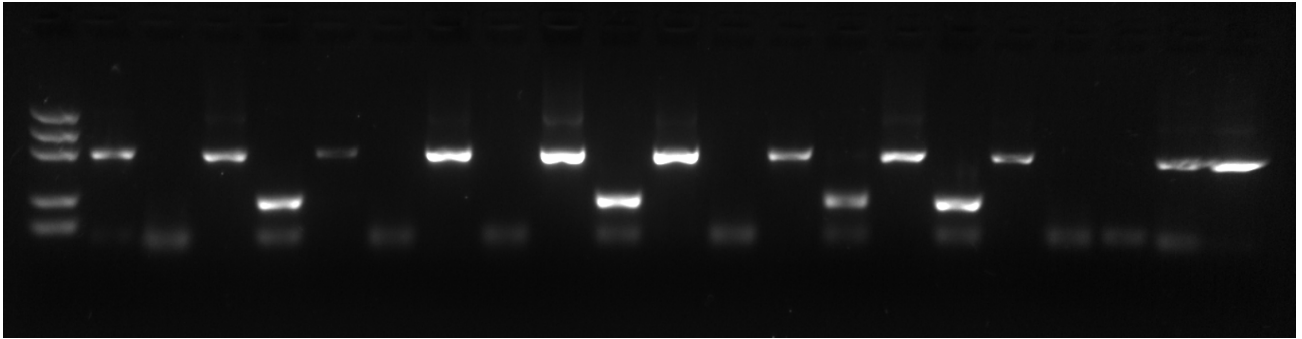


Fig. 68: DNA barcode of genetically modified corn. From lab of Dr. Fernando Tenjo, VCU Life Sciences



Fig. 69: Alex Arzt, *Mead Sound*, video still, 2013.



Fig. 70: Alex Arzt, *Jack O'Lantern #3 (Omphalotus illudens)*, 35x44 in, bioluminescent mushroom cap on large format color film, scanned and inkjet printed, 2013.



Fig. 71: Alex Arzt, *Brown Oyster mushroom growing bag*, 2014.

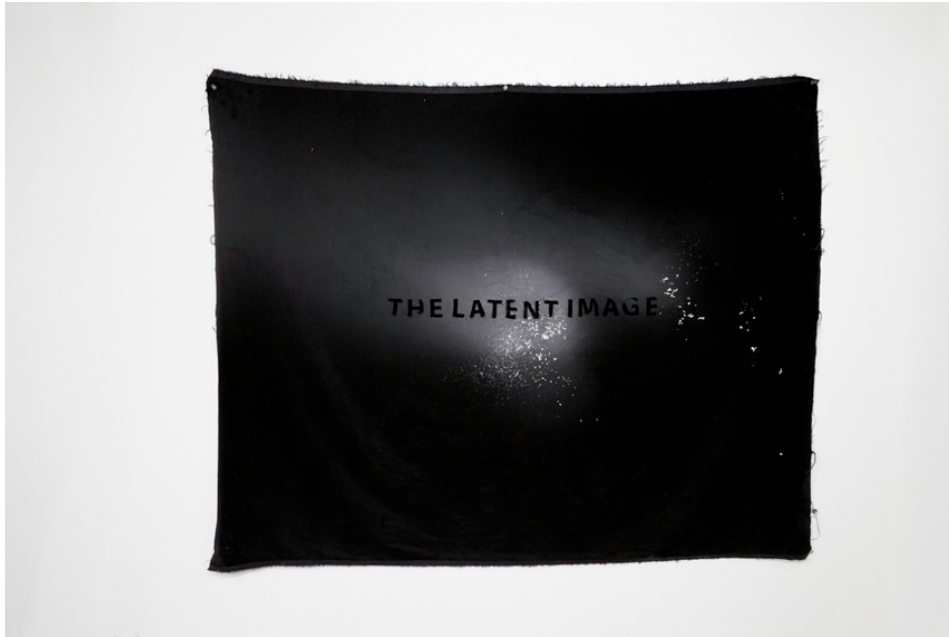


Fig. 72: Alex Arzt, *The Latent Image*, Oyster mushroom spores on black velvet, 20x40 in., 2014.



Fig. 73: Alex Arzt, *River Soap Wash Station*, 2014. Lard, Monocacy River water, lye, soil, wildflowers, cider gum leaves, grass.



Fig. 74: Alex Arzt, *Hut*, 2014 Pine struts, cedar planks, starplates, sod, headphones, MP3 player, site recordings from day and night near Monocacy River.



Fig. 75: Alex Arzt, *Dispersal* Installation, 2015.



Fig. 76: Alex Arzt, *Dispersal* Installation, 2015.



Fig. 77: Alex Arzt, *Actions For Knowing a Pelargonium*. HD video, 6:24 minutes, 2015.





Fig. 78: San Diego Botanical Garden plant label, 2013.

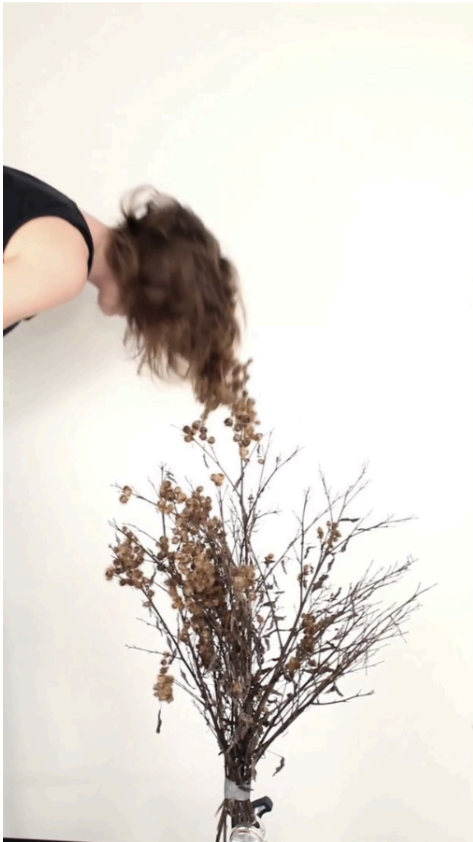


Fig. 79: Alex Arzt, *Animal to Plant, Plant to Animal (Burdock)*. HD video, 4:00, 2014.

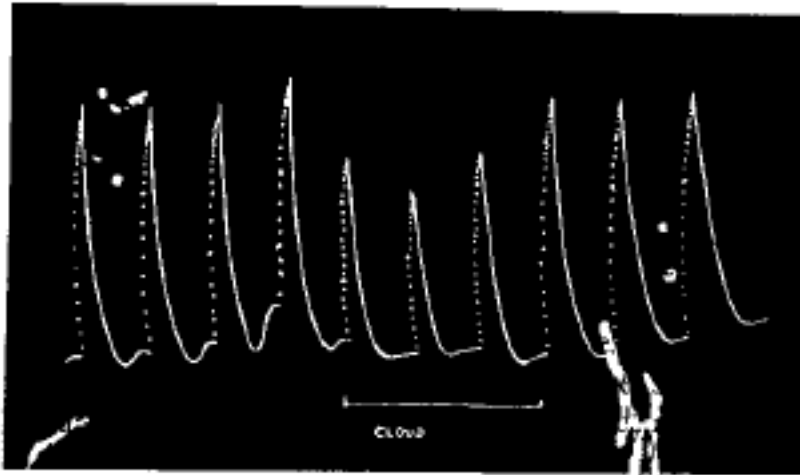


FIG. 11. Effect of passing cloud.

Fig. 80: Jagadis Chandra Bose, "Effect of a passing cloud," from *Plant Autographs and Their Revelations*, p. 17.

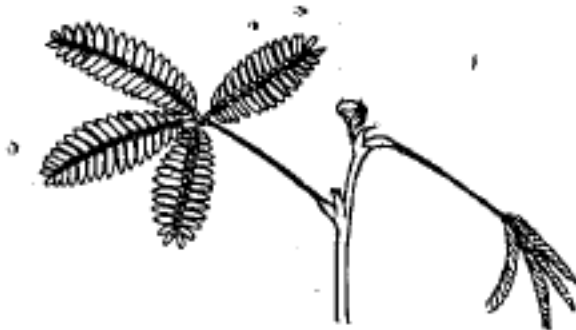


FIG. 1. Leaves of Mimosa in expanded condition (left) and contracted condition after stimulation (right).

Fig. 81: Jagadis Chandra Bose, "Leaves of Mimosa in expanded condition (left) and contracted condition after stimulation (right)," from *Plant Autographs and Their Revelations*, p. 7.



Fig. 82: Alex Arzt, *Touch, Burn, Water: Mimosa pudica Polygraph Test (For Sir Jagadish Chandra Bose and Cleve Backster)*, thermal paper, 8x23 in, 2015.



Fig. 83: Alex Arzt, *Richmond Seedling: Ginkgo*, porcelain, acrylic, dirt, ginkgo seedling, 4x10in, 2015.



Fig. 84: Alex Arzt, *Richmond Seedling: Osage Orange*, porcelain, acrylic, dirt, osage orange seedling, 4x14in, 2015.



Fig. 85: Alex Arzt, *Richmond Seedling: American Persimmon*, porcelain, acrylic, dirt, persimmon seedling, 4x10in, 2015.



Fig. 86: Alex Arzt, *Norfolk Island Pine*. HD video, 2:09 loop, 2015.



Fig. 87: Antonio del Pollaiuolo. *Apollo and Daphne*, c. 1470-80.



Fig. 88: Alex Arzt, *Dirt Time, Plant Thinking*. Eastern red cedar, soil, found seeds, LCD monitor, media player, HD video, 2015.



Fig. 89: Alex Arzt, *Seeding Spirit*. HD Video, 2:37, 2015.



Fig. 90: Alex Arzt, *Touch-me-not/sensitive plant/shame plant/prayer plant/humble plant/Mimosa pudica*. HD video, 1:50 loop, 2015.

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