



# THE PLANT CONTRACT

Art's Return to Vegetal Life

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BRILL | RODOPI

## INTRODUCTION

This book focusses on the art aesthetics of new plant discoveries. It is an ode to, and celebration of, the genius of vegetal life.<sup>1</sup> It is also an inquiry into how art can mediate and express plant-philosophy to a wider public. This is a phytological project based on plant-love. But it also acknowledges that some plants are wicked, some are defiant and others cannot be controlled. Respect, maybe even a little fear, for plants reminds humans of our true place in the world.

My inquiry is immersed in the realm of visual art. There is a cohort of performance, video, bio, sonic, environmental, installation and social engagement artists who are interpreting and experimenting with plant information in their artworks. This creates a mediation and a communication, as well as an expression, of vegetal thought. Yes, art raises awareness for critical issues but it also infiltrates our cultural and social being. Plant art has a greater capacity than mere aesthetic instrumentalism. Just as art has its own independent entelechy, so too plants exist outside any human manipulation of them. This connection between plant and a flat art ontology (the collapse of any hierarchical structure) drives the ideas in this book and helps to begin a process of devising what we might call a plant contract, a new deal for the vegetal world: a means of altering our perception of nature by attempting to see all the parts, as well as the overall sum, of plant art.<sup>2</sup> As we discover more and more about the radical and uncanny life of plants, it is hard not to be inspired by what this could mean for our existing contracts in human social and political life.

Nature can no longer be seen as an inert backdrop to human action. A tree does not call itself a tree: it is a complex organism of charging hormones, firing synapses, busy photosynthesis and strange excrescences. At the same time that plants have been modified, synthetically acclimatised commercialised and commodified, word is spreading about how interesting and capable they are, for themselves. It is not difficult to speculate that there may be a future collision between those that acknowledge the appearance of plants as ontologically independent entities, and those who

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<sup>1</sup> Luce Irigaray refers to plant 'genius', whereas Matthew Hall and Anthony Trewavas to plant 'intelligence': Matthew Hall 'Bridging the Gulf: Moving, Sensing, Intelligent Plants, in *Plants as Persons: A Philosophical Botany*, Albany: SUNY Press, 2011; Anthony Trewavas, 'Aspects of Plant Intelligence', *Annals of Botany*, Vol 92, No 1 2003, 1-20.

<sup>2</sup> Dalia Nassar, 'Metaphoric Plants: Goethe's *Metamorphosis of Plants* and the Metaphors of Reason', *The Covert Plant*, Santa Barbara: Punctum Books, 2017.

rely on plants' agricultural and corporatized profit potential. We are moving into the epoch of the plant, where careless productions and practices relating to vegetal life are becoming more controversial. How this epoch will unfold relies upon how humans deal with plant world relations.

In the context of art, Critical Plant Studies is a perception of various ecologies of the world as interactions of energetic activity. Each ecology connects with the next and to its entirety as well. This is an aggregated system of addressing changes to notions of nature, away from transcendence, away from sublime aesthetics. Instead of the human mind thinking like a machine, in this text, the human mind approaches its environment as a plant system. At the very least, this book is the gesture of attempting to do so. Vegetal studies can assist in understanding human connections with its ecologies, and human cultural practice can help humans to assist plant functions, in order to provide a more cooperative way of living. Bringing art practice into the mix introduces an accelerating mediation. This is the purpose of combining art and plants within a critical context: a dovetail effect.

In an interview with Michael Marder on the relations between plants and art, he said,

Art, in turn, is sublimated plant-sensing. Aesthesis, at the root of sensation and aesthetics, is not the exclusive province of animals and humans; as we know, plants are highly receptive to a variety of environmental factors, from light and moisture gradients to vibrations. To be sure, plants neither think nor see in images, but this does not mean that they neither think nor see.<sup>3</sup>

Sublimated plant-sensing reminds us of the capacity of art to create reactive sensory experiences outside the everyday. The thinking, sensing and seeing of plants and of aesthetics are deeply connected, despite their apparent differences. Plants root, shoot, flower, photosynthesise and self-generate. Aesthetics creates, represents, expresses. It mobilises analogy and allegory and is a human-centred study of the nature of beauty and taste. The connection lies in the deep beauty of considering plants outside the confines of their functionality and beyond the reductive consideration of those with 'taste.' Marder's point that plants don't think or see in images, but they do think and see, also reminds us of how art can create an experience that shows us

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<sup>3</sup> Prudence Gibson (ed). 'Interview with Michael Marder' in *The Covert Plant*, Santa Barbara: Punctum Books, 2017.

something we couldn't see or understand before; art creates a level playing field for everyone to experience sensory stimuli. This equality is in keeping with vegetal experience.

Ascribing greater status to plant life is a political act, and art that draws attention to this shift in structures of legitimacy is also political. Jacques Ranciere's aesthetic regime focuses on the political capacities and sensations of art. Art is no longer a self-purge, he says, but a moment in political time.<sup>4</sup> The way in which an ecosystem flourishes, the way its elements vie for and share nutrients or don't, is political. Where Ranciere moves away from conventions of aesthetics and concentrates on where and how an artwork or art experience exists in a particular moment in time can also be connected with critical plant studies in terms of time. Like Ranciere's regime of political time, the elements within a given environment exist at a certain time and a certain place. The force of these external constituent elements are a part of the work itself. Plant life, too, exists as part of a wider ecology.

In keeping with Ranciere's political regime for aesthetics, this book places art and plants on the political environmental agenda as an inter-species inter-relation. It also highlights the necessary social and moral functions of creating a new aesthetic that relies emphatically on plant life. The artists discussed in this volume have been selected due to their synchronized connection to the critical plant concepts that have been developed and include artists from across the world, whose work I have come across during my inquiries to date. An online database is being developed to gather data on all artists working in this area and it will be maintained as an ongoing adjunct resource.

## **The aesthetics**

Environmental aesthetics is an emerging field, as is Critical Plant Studies. These are innovative, if not radical, areas of research due to the sense of impending climate crisis that many of us feel we are living in. The emergent scientific evidence to support what we already suspected – that plants have capacities and capabilities beyond human comprehension – has been a monumental impetus for plant scientists, philosophers and art writers. Plant science (care of, Gagliano, Simard, Chamovitz et al) shows us that plants communicate chemically, that they make decisions

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<sup>4</sup> Jacques Ranciere, *Aesthesis: Scenes from the Aesthetic Regime of Art*, London: Verso, 2013, 11.

that suggest associative learning<sup>5</sup> and that they communicate using complex fungal systems amongst their roots.<sup>6</sup> Plants sense danger and vibrations, they manipulate insects and animals in order to thrive. We now know that plants learn and remember.<sup>7</sup> They can function asexually and usually prosper as a community.

These are qualities many humans in Western culture have forgotten, or have lost touch with. Art and narrative writing has the ability to tie together plant knowledge and cultural studies, so that we can re-learn why our connection with plant life is so important. It is also important so that humans can see that, despite all the watering, fertilizing and positioning of plants that we do in our gardens or balconies so that plants grow, the truth is that plants do not rely on humans for anything (except perhaps as useful composting, once we die). The philosophical and economic relationship between humans and plants has been patronising at best, and life-threatening at worst.

The discourse of plants and art falls within enviro-aesthetics. All that we yearn for, within a context of aesthetics, stems from conscious spirited awareness, a sentient life. These are not attributes we have conventionally associated with plants. However, the discoveries in plant science over the last decade have led us to reconsider the convention of denying plants a sentient life. If aesthetics creates a collective human mediation of the world, for a better understanding of being, then the varieties of plants, with their decidedly non-human and seemingly mechanical activities, do not at first seem to complement aesthetics. Yet, increasingly, artists and scientists are drawing attention to the similarities between plant life and human life, and between plant life and media technology. These art and plant-science intersections are the connections I hope to make. These are also the creative elaborations I want to develop.

The epoch of plant discovery, from the turn of the 21<sup>st</sup> century onwards, marks a profound change in human perceptions of nature. This has resulted in a period of extreme confusion as artists, writers and other humanists grapple with the philosophical implications of science research that shows plants remember, learn, associate and decision-make. As an Australian, this difficulty excites an alarming memory of an earlier time. Australia was invaded by white

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<sup>5</sup> Prudence Gibson, 'Pavlov's Plants', *The Conversation*, 6 December 2016. <https://theconversation.com/pavlovs-plants-new-study-shows-plants-can-learn-from-experience-69794>. Accessed 6 January 2017.

<sup>6</sup> Suzanne Simard, 'Leaf Litter, Expert Q and A', *Biobabitats*, Vol 15, Edition 4, 2016, <http://www.biobabitats.com/newsletters/fungi/expert-qa-suzanne-simard/>. Accessed 6 January 2017.

<sup>7</sup> Monica Gagliano, 'Experience teaches plants to Learn Faster and Forget Slower in Environments Where it Matters', *Oecologia*, Vol 175, 2014.

Europeans around 1788, when German Idealism and the Enlightenment were directing scientists to observe and to categorise, to denominate and to taxonomise the examples of plant life collected on sea voyages. At the same time, the aesthetic decisions and praxes of the time were firmly entrenched in Romantic conventions. That is, they were still referencing classical motifs and Picturesque structures of creating paintings.

Once landed on Australian soil, the unwieldy bushland and the unclassifiable characteristics of the bush, the native plants and their foreign forms were too much for colonial artists. European mimicry and artifice, flourished in early Australian art, due to a kind of paralytic inability among artists to create new visions. They simply did not know what to make of these strange new flora and fauna, and they couldn't absorb the oddities of new information into their aesthetic vision. Whereas back in the 18<sup>th</sup>-19<sup>th</sup> century, Goethe, Humboldt, von Neumayer and other roving scientists were searching for a unified whole, a system of recording nature that could be harmonised by an archetype; scientists are now searching for information about plants that transcends the hierarchies we have adopted since Linnaeus. In other words, German Idealists yearned to find a plant archetype. Now we yearn to find a distributed plant knowledge system. This is Critical Plant Studies: to identify how these disruptive times affect culture and society and to document the philosophical fallout. Both periods of history, the Enlightenment and the Anthropocene, are bound to disrupt and inconvenience what we thought we knew and who we thought we were.

Therefore, I am arguing that the same problematics are presenting now. This book interrogates art being made in this framework of new Critical Plant Studies. There is a need to negotiate the criteria of aesthetic value of current plant-based and plant-theoretical art work. There has not yet been enough critical aesthetic discussion of the artwork being made that focuses on plant studies, despite the magnitude of enthusiasm artists are experiencing. There is some aesthetic refinement and critical formulation to be done.<sup>8</sup>

If plants are performing their own subjectivities, as I will argue they are, the classical tradition of aesthetics is made difficult to start with. Art has a long history of object-based making. Even performance and video work relies upon the body as object, the experience as something which must be recorded or archived before we can make aesthetic sense of it. Much post-modern

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<sup>8</sup> There is great work in this field of art and plants by writers Natasha Myers and Giovanni Aloï: Natasha Myers, 'From Edenic Apocalypse to Gardens Against Eden', *Infrastructure, Environment, and Life in the Anthropocene*, Duke University Press, forthcoming 2017; Giovanni Aloï (ed). 'Beyond Morphology', *Antennae*, Issue 18, Autumn 2011.

artworks challenged these object-oriented criteria for what constitutes art; but it is the post-human turn, with its focus on moving beyond the limits of subject/object dyads, that best addresses the problems we face once we accept that plants are subjects, as well as objects. Plants perform subjectivities and art does the same. This book is dedicated to illuminating how this occurs.

### **The science and the theory**

Subjectivity is important when thinking of plant scientist Monica Gagliano's careful experiments with the Mimosa plant. She built apparatus in the lab that could hold a pot plant and then suddenly drop the plant, safely within the apparatus. The dropping initially caused the plants to curl up their leaves. This, the anti-plant neurobiology critics cry, is no more than habituated mechanism. Plants grow towards the light, their roots crawl towards water and nutrient supplies in the soil.

However, Gagliano's experiment went two steps further. Once she had confirmed that plants react to this sudden dropping of them from a height, she performed the dropping again and again. Over time, they stopped exhibiting defensive strategies of curling their leaves. This was not just reactive or habituated. This proved a degree of learning. Then she waited a period of a month and repeated the dropping. Again, they did not curl up or retract. In other words, they had not only learned but they had remembered.

Plant theorist Jeffrey Nealon notes that, for Derrida, survival is the unconditional condition of living.<sup>9</sup> Change and adaptation, then, do not necessarily constitute desires or interests, but survival. Plants exhibit a drive to survive. The interesting difference, as Nealon suggests, is that this is not an individual drive but a participation within a collective drive. This has implications for nature as a whole.

Nealon's suggestion that plants function as parts of a whole is not 'vegetal indifference,' but vegetal co-existence. Marder's vegetal indifference refers to humanity's disturbing habits of apathy towards plants when they seem not able to contribute to their own existential being. In other words, the suggestion is that because plants don't have 'desires' within the construct of

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<sup>9</sup> Jeffrey Nealon, *Plant Theory: Biopower and Vegetable Life*, Stanford, Stanford University Press, 2016, 57.

language, they are not as relevant as humans. However, what if plants have a unique set of existential processes, from which we are excluded? Humans have been so busy excluding plants from the human realm of sentience that we may have missed some crucial scientific knowledge from which we are excluded.

These relations between plants and environment, and plants and humans, are entangled and material.<sup>10</sup> The lexicon in which to discuss these new discoveries is as demanding as the experiments themselves. Can we use terms such as neurobiology and plant intelligence?<sup>11</sup> Gagliano's recent Pavlov's Peas experiments, where she experimented to prove that plants have associated learning abilities, show us that plants are able to respond to artificial cues (in this case, wind) rather than real cues (in this case, light). To associate wind with the reward of light, when there is no light, debunks our previous assumption that plants' response to light is automatic and non-cognitive. Instead, this experiments suggest that plants are making decisions.<sup>12</sup>

## The Glasshouse

Excavating terms such as plant intelligence in science may require an equally radical approach in the humanities (including art and writing). To move across disciplines requires order and argument, but in this book there is also an effort to incorporate experience and memory, just as Marder did in his recent book *The Chernobyl Herbarium*. The benefit of allowing narrative to creep into the crossover of art and science is that it allows generosity and growth; it also concedes the chance of failure in any experimentation.

I have a strong memory of my grandfather's glasshouse. The front gate, for example, was not much more than knee-high and it opened onto a liver-brick pathway leading down to the house. The house had two wings, like double sentries on either side, and lead-lined window panes in dappled glass. It was a big cold house in winter, due to the shadow of the hill behind, but cool and dim in summer. I often think of my grandfather's big hand perpetually holding a glass tumbler, full of tinkling ice and endless nips of scotch.

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<sup>10</sup> Marijke Van Der Veen, 'The Materiality of Plants: plant-people entanglements', *World Archaeology*, Vol 46 No 5, 2014, 799-812.

<sup>11</sup> P. Struik, X. Yin, H. Meinke, 'Perspective Plant Neurobiology and green Plant Intelligence: Science, Metaphors and Nonsense', *Journal of the Science of Food and Agriculture*, Vol 88, 2008, 363-370; Anthony Trewavas, 'Response to Alip et al: Plant Neurobiology – all metaphors have value', *Trends in Plant Science*, Vol 12, No 6, 2007.

<sup>12</sup> Prudence Gibson, 'Pavlov's Plants', *The Conversation*, 6 December 2016. <https://theconversation.com/pavlovs-plants-new-study-shows-plants-can-learn-from-experience-69794>. Accessed 6 January 2017.



His glasshouse was located around the side of the house and along the eastern perimeter of the rear garden. A glass structure of five metres by four metres, it had the smell of manky earth and seaweed. The seaweed concentrate was used to fertilise the many pots of orchids along the benches. Above the benches were two long suspended water reticulation systems that emitted a haze of water twice a day on a timer. It was warm in this space, the glass was smeary with dirt and cast strange shadows across the orchids. There were two long benches on either side.

He fed the orchids the seaweed solution via a squirt bottle. *Not too much*, he used to warn, handing the plastic bottle to me. *Too much and it will raise their hormone levels and they will develop ugly extrusions on their stems*. I squirted sparingly, drinking in the aroma of fetid and manky salt and wet earth. *More than that*, he directed, *too little and they won't have enough nutrients*. This time in the glasshouse was precious to me but I soon noticed that my grandfather rarely cared for the orchids, he instructed his wife and female offspring to care for the flowers instead. Whilst this memory of him showing me how to care for his orchids holds happiness, it also heralds a warning. How can women, like plants, move beyond our instrumentality? How can we disrupt old habits so that women have the space to grow and bloom without being assimilated into the 'other other's' being? This question dances across the lines of this book, and is ongoing and irreducible.

There are several female writers who are holding the flag of feminist plant studies, such as Luce Irigaray and Elaine Miller. Elaine Miller's investigation of the vegetative soul, through continental philosophy, reminds us of Heidegger's term the 'groundless ground', which displaces the fiction of a univocal origin.<sup>13</sup> No plant is the same, no plant *umwelt* is the same. Miller believes Irigaray's trope of efflorescence 'explicitly performs what we have called a plant-like reading.'<sup>14</sup> Miller explains that Irigaray's efflorescence complicates the idea of a single reduced subject and a singular phallic reading, whilst reclaiming the ivy-like growth.<sup>15</sup> In Deleuze and Guattari's introductory rhizome chapter of *A Thousand Plateaus* they talk about the One (the reflection of nature) becoming two.<sup>16</sup> Whilst their logic extends to computer and IT studies, ones and twos, their ideas also allow for the distribution and multiplicity that we are increasingly experiencing in

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<sup>13</sup> Elaine Miller, *The Vegetative Soul: From Philosophy of Nature to Subjectivity in the Feminine*, Albany: SUNY Press, 2002, 182.

<sup>14</sup> Ibid 183

<sup>15</sup> Ibid 183

<sup>16</sup> Gilles Deleuze and Felix Guattari, 'Rhizome' in *One Thousand Plateaus: Capitalism and Schizophrenia*, Minneapolis: University of Minnesota Press, 1987, 21.

our digital lives. For art, that means a shift from one-to-one (viewer to painting) to one-to-many (viewers and experience). However, the impact of art remains the same: localized, personalized and intimate.

## **Plant writing**

Is this writing that I am doing here today a kind of pharmakon? Nearly a poison, nearly a cure? Do we need a changed perception of nature to redress the relationship between humans and the plant world in order to lessen the effects of climate change? People will suffer eco-crisis fatigue if we keep hammering away at the same doom-and-gloom points. However, if we create something, a means of communicating that may initially lurk in the shadows of a creative approach to writing, then this might be a way for creative writing to become real - this is hyperstition. Create the narratives of bio-rights and eventually the laws will change too. This was the kind of experiment that Derrida conducted in his writing. Write it down. It may be a trick, it may be a curse/cure. It may not be reliable or trustworthy, but once it is deconstructed and rewritten, it is done.

Marder said, of plant writing,

But, no doubt, more needs to be done, boldly and experimentally, to invent a way of writing that would respond and correspond to plant life. Patience plays an important role here, as does the absolute openness to the other. Connected to this, I always wonder how to give my writing back to plants. My dream for *Plant-Thinking* was to embed seeds into its covers and to urge readers to bury the book after it has been read, letting it decompose and germinate.<sup>17</sup>

In this book, I adopt Marder's call for bold and experimental writing. I present vignettes and case studies of artists and scientists working with plant science. This is a means of making the invisible visible. Plants are inseparable from their environment. That is one reason why they have been considered as having a non-identity.<sup>18</sup> Humans think of themselves as independent, thoughtful and wilful entities. They see plants as trapped in their places. They are bound to the

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<sup>17</sup> Prudence Gibson (ed). 'Interview with Michael Marder' in *The Covert Plant*, Santa Barbara: Punctum Books, 2017.

<sup>18</sup> Michael Marder, *Plant Thinking: A Philosophy of Vegetal Life*, New York: Columbia, 2013, 162.

ground by their roots, unable to move far or travel across the planet's surface. This suggestion of immobility surely is the strangest critique of plants. In an effort to reduce them to a less relevant species than humankind, we have cast them as insentient and immobile, neither of which is correct (seeds travel in the wind, roots dig for miles and miles, vines and ground-cover can extend across vast distances).

Marder walks through a philosophical arbor of plant-related concepts in his writing. His theses move the prominence of vegetal life away from categorization and away from a solely human subjectivity. He speaks of plants as the fifth element: air, fire, water, earth...and plants.<sup>19</sup> In this book, I would like to respond to Marder's work, by asking why have we not paid more attention to the high-functioning, communication and sensory intelligence of plants in previous decades, particularly in art aesthetics, and whether that emergent art/plant area is effective? A consequential question will be the effect a radical reinterpretation of vegetal relevance will have on art and culture.

In an effort to align the philosophical ideas of aesthetics and ontology with plants, Marder charts various continental thinkers who refer to plants in their writing, for instance, Nietzsche's interest in vegetal digestion, Hegel's concession that the act of devouring extends to the nutritive properties of plants, and Freud's repression as an interference with flowering as sexual maturation and human ripeness.<sup>20</sup> When Marder draws a link between 'spirit consciousness' as being only partly exposed to the light, as are plants whose roots are hidden in the dark soil, we see his wish, the urge, the desire to connect plants with 'life.'<sup>21</sup>

The art world is a discipline that can provide an interpretation of the changed way we understand or conceive of plants. For instance, much of the artwork being conducted around plant neurobiology is performance art, such as Cat Jones and Spela Petric, and is known for its durational extremes and temporal qualities. The temporality of plant life, likewise, functions on a different scale and under a different model from the temporality of human life. Although the sun, moon and seasons have a direct effect on the opening and closing of flowers and on their ephemeral ways, short plant life-times and tree longevity mean that the operations are different. Plants operate on time scales of growth, dispersal and regeneration that are very different from human experiences. Plants operate within time scales we can't understand. Consequently, artists

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<sup>19</sup> Michael Marder, *Plant Thinking: A Philosophy of Vegetal Life*, New York: Columbia, 2013, 6.

<sup>20</sup> Ibid, 172-5.

<sup>21</sup> Ibid, 173.

who create technological interfaces that mediate or alter plant time, and mediate their cellular communication and metabolic activity, are especially interesting as a means of learning from plants. Mancuso in his new book *Brilliant Green* asks ‘What does art tell us about the relationship between human beings and the plant world?’<sup>22</sup> The groundswell of plant-related artworks marks a time in history where we are turning to plants for better models of living and creative solutions to climate change problems, presented as aesthetic acts.

## Razing Terra Mater

An additional resounding point of curiosity at the plant-science and art nexus is the role of the female. This discourse is part of the emergent state of radical reinterpretation of vegetal life. Nature, of course, has conventionally been cast as a womanly figure. A mother, a fecund vessel within which life can grow. Plants, since the 19<sup>th</sup> century burgeoning of female interest in botanical studies, have attracted women. This is a domain of thought and scholarly engagement that has a strong female heritage. Many male philosophers have written about plants and trees in their work; for instance, Marder writes essays on Aristotle’s wheat, Leibniz’s blades of grass and Derrida’s sunflowers in his book *The Philosopher’s Plant: An Intellectual Herbarium*. Marder follows ten male philosophers, but he only refers to one female: Luce Irigaray. Marder and Irigaray work together on different writing texts, both scholarly and journalistic. There is the sense they conspired, for Marder’s intellectual herbarium book, to draw connections with her favourite plant, the water lily. However, there have already been deep connections with plants for Irigaray. She has said to Marder in private correspondence that, ‘All my work develops as a plant grows’ and she has said that thought needs ‘to be ready to listen to nature, to the sensible’.<sup>23</sup>

Sex doesn’t correspond to sexism in the plant world, a mode that humanity might learn from. Most plants have a male and a female part in the one plant. Some mosses have male plants and female plants. Some conifers have two types of cones; one is the stamen cone, the second catches the pollen if the wind is howling right. Flowers have both stigma and stamen in the one plant. These self-fulfilling processes of reproduction have enormous significance for a culture where gender and sexual politics are a constant source of change and fluidity. There are potential

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<sup>22</sup> Stefano Mancuso, *Brilliant Green*, Bologna: Island Press, 2013, 11.

<sup>23</sup> Luce Irigaray, *I Love to You*, New York: Routledge, 1996, 139.

provocations for a re-thinking of the world, when individual species have hybrid sexuality. This book will address plant and art hybrids as provocateurs in an art-science discourse.

We can't escape the bind of only understanding the state of being through the sieve of humanness. This is why, according to Claire Colebrook, 'becoming-woman' is still required.<sup>24</sup> An alternative can be to shake the tree and find a women's movement that is pluralised amongst male and female and all other gender combinations, to create new political and cultural units of thought. Interesting, here, to reiterate that Luce Irigaray's choice of plant as a means of elucidating philosophical ideas in Marder's book is the water lily. The water lily is both rooted and it floats across the water. It moves on a fluidly female surface and the lily reproduces asexually with the help of insects carrying seed from the anther to the stigma. The water lily, then, relies on no man, will not be tied down and requires the help of an entire ecological community to thrive. This plant is the perfect analogy for my aesthetic approach to plant studies.

It is time to reject terms such as Mother Nature or Terra Mater as terms that paralyse women into a role of carer, nurturer and healer. Instead, it is time to embrace the plant as a feminine symbol – growth and transformation, a female subjectivity. As Miller says, 'Woman is supposed to have an essence that defines her as a woman, once and for all. She is relegated to the status of nature or matter, and in this sense can do no more than assist or ground man in the actualization of his subjectivity.'<sup>25</sup> In this volume, I discuss artworks as part of Irigaray's efflorescence, as a blooming metamorphosis and as an endless individuation. These bloomings cannot be confined or bound in discourse. Irigaray's nonhuman and non-animal feminine subjectivity is an always sexed subject. Elaine Miller notes Irigaray's thoughts when she,

Proposes a feminine model of subjectivity, one that returns to a close connection to the philosophy of nature, and in particular to the figure of the plant. In doing so Irigaray is not suggesting that a return to unmediated nature - in itself an impossible task - would bring about a meaningful change for women. Rather, she implies that a return to and a reworking of the symbolics of nature might be a place from within the social or symbolic order from which to retroactively restructure the ways in which women's embodiment,

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<sup>24</sup> Claire Colebrook, 158

<sup>25</sup> Elaine Miller, *The Vegetative Soul: From Philosophy of Nature to Subjectivity in the Feminine*, Albany: SUNY Press, 2002, 188.

natural role, and passage into subjectivity are thought, and thereby to effect a real change for women in the cultural order.<sup>26</sup>

In my own modest way and as an ode to Irigaray, this book's focus is also not a return to unmediated nature. It is, contrarily, bound in aesthetic mediations of plants. The artworks discussed in this book are a reworking of the symbolics of nature and are real examples of restructuring women's embodiment and passage into subjectivity, leaving room for sexual difference.

### **The contracts.**

In my efforts in this book to discuss the prospect of a plant contract, I need to turn to Rousseau's *Social Contract*. Rousseau's earnest call, to mark a difference between the general will and the collective individual will, was a proposal that the individual give up his/her sovereignty in return for the care of the state: 'Let us take it that men have reached the point at which the obstacles to their survival in the state of nature overpower each individual's resources for maintaining himself in that state. So this primitive condition can't go on; the human race will perish unless it changes its manner of existence.'<sup>27</sup> Research in plant science shows that plants share information and all plants in the given ecology benefit from the resources that are communicated and also protected by that information.<sup>28</sup> Rousseau's acknowledgement of the individuals and the collective are important in terms of perception of the parts and the whole of any given group.

Rousseau said, 'But, besides the public person, we have to consider the private persons composing it [the social contract], whose life and liberty are naturally independent of it. We are bound then to distinguish clearly between the respective rights of the citizens and the Sovereign, and between the duties the former have to fulfil as subjects, and the natural rights they should

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<sup>26</sup> Elaine Miller, 'The Vegetative Soul: From Philosophy of Nature to Subjectivity in the Feminine, Albany: SUNY Press, 2002, 189.

<sup>27</sup> Jean Jacques Rousseau, '6 The Social Compact', in *The Social Contract*, 1762. [https://www.ucc.ie/archive/hdsp/Rousseau\\_contrat-social.pdf](https://www.ucc.ie/archive/hdsp/Rousseau_contrat-social.pdf) Accessed 6 January 2017.

<sup>28</sup> Suzanne Simard, 'Leaf Litter, Expert Q and A', *Biohabitats*, Vol 15, Edition 4, 2016. <http://www.biohabitats.com/newsletters/fungi/expert-qa-suzanne-simard/> Accessed 6 January 2017.

enjoy as men.<sup>29</sup> This blueprint for a civil society, of the community as one being cared for by ‘the one’, was established only 250 years ago. In the history of Western thinking, this is not so long ago. An animal contract and a plant contract are yet to be devised, but the sentiments of Rousseau’s pre-democratic collective of individual wills are interesting to note in terms of a move towards a plant contract.

## **The Natural Contract**

Michel Serres elaborated a ‘natural contract’ and this may be a useful consecutive model for analyzing artworks, and collaborating with artists in their plant endeavours.<sup>30</sup> We are no more than renters on the planet and we must therefore be aware there is a bond to pay if we leave a mess at the end of the lease. Our worries these days, according to Serres,<sup>31</sup> are weather patterns and time. Climate change has affected our relationship to the weather, in the short term rather than the long term. How does that affect the long-term now – decision-making with longevity? He writes, ‘But more than that is at stake: the necessity to revise and even re-sign the primitive social contract. This unites us for better and for worse, along the first diagonal, without the world. Now that we know how to join forces in the face of danger, we must envisage, along the other diagonal, a new pact to sign with the world: the natural contract.’<sup>32</sup>

So even while some of the criteria for Darwinian and Linnaean classification and ordering of various natural life science species were a way of placing humans in the apical position, as species that can speak and move and think, there is new evidence that plants can do many of the same things as humans. Michel Serres writes, ‘Would a new Eden emerge if we agreed to a Natural Contract?’<sup>33</sup> He is referring to Eve in the garden, where her toes grow longer in the viscous humus and she is a garland climbing around the great tree. There is a sense, in Serres’ writing, that Eve is a plant, entwining and braiding around the limbs of the Tree of Knowledge, which was of course cut down by Adam to make the first dwelling. A plant contract seeks to make amends for that original error.

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<sup>29</sup> Jean Jacques Rousseau, *The Social Contract*, 1762, 21. [https://www.ucc.ie/archive/hdsp/Rousseau\\_contrat-social.pdf](https://www.ucc.ie/archive/hdsp/Rousseau_contrat-social.pdf) Accessed 6 January 2017.

<sup>30</sup> Michel Serres, *The Natural Contract*, Ann Arbor: University of Michigan Press, 1995

<sup>31</sup> *Ibid*, 27.

<sup>32</sup> *Ibid*, 15.

<sup>33</sup> Michel Serres, *Biogea*, Minneapolis: Univocal, 2012, 107.

## The Plant Contract

My personal tree spirit is the poplar tree. Its leaves flicker in the sunlight and represent irresolution. Despite owning up to being ‘indecisive’ as a personality trait, I can confirm that the poplar tree propagates using a rhizome. These underground rhizomes or creeping rootstalks can survive for thousands of years, even when the surface trunks and foliage have been devastated by fire or drought, insect attacks or fungus. The rhizome is a source of longevity, fecund with creative possibility. In asexual plant reproduction, the rhizome can act as a reproduction system. The tips of the underground or underwater roots can break off as new plants. This is one means of reproduction in the water lily, couch grass and nettles. The attraction of the rhizomic model in plants is their subterfuge, their activity away from human eyes.

New discoveries about how plants feel and think seem outlandish, because botanical specimens have no human-like brains. Instead, of course, they have complex rhizomic systems and methods of communicating via chemical emissions or via the communicative power of fungi that grows among their roots. The electro-chemical activities caused by remembering previous stresses, such as animals overeating their leaves or extended periods of drought, are the same chemicals that humans emit when remembering stresses.<sup>34</sup> These may be procedural memories in plants, rather than emotional memories, but we have more in common with plants than previously thought.

It is important to understand our experience of the botanical world. There is a long tradition of cultivating plants: the activities of gardening, ordering, classifying, collecting, picking and harvesting. Not to mention genetically modifying them and using hazardous chemicals to enhance and augment their growth. Indigenous Australians used traditional methods of burning the bush for regeneration and would plant a tree if a community needed shade.<sup>35</sup> So it is human nature to admire a well-manicured garden, to enjoy the produce of an apple tree and to balk at unsightly weeds. The question this investigation asks is whether we have been treading the wrong track of plant aesthetics. Better to consider the bounty and liveliness of plants in-themselves, rather than for-us. By ‘for-us’ I mean for our aesthetic delectation, for our sustenance, shade and oxygen. Can we instead consider plants in their own right, via the mediations of art?

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<sup>34</sup> Daniel Chamovitz, *What a Plant Knows*, NY: Scientific American/Farrar, Straus and Giroux 2012, 131.

<sup>35</sup> Bruce Pasco, *Dark Emu: Black Seeds*, Broome: Magabala Books, 2014.



The plant contract is a method of telling stories about plants and art together. It is an aesthetic contract and as such has systems, rather than rules. It harnesses aesthetics as an analogic act, a way of drawing connections between species and things. It has the courage to be playful and celebratory, even in the face of possible failures. This is what it means 'to essay', to venture out and experiment even though the potential for success is slim.

Art usually functions as an open-ended inquiry of becoming and of change, without proscription. The discourse surrounding the artworks that align plant and aesthetics is not already made, already decided. It is presented only as provocations, just some water for your pot plant of thought. Miller summarises Irigaray's plant thinking by saying that 'Irigaray subverts traditional metaphors as a rhetorical weapon against the tradition that has worked to exclude and at the same time to assimilate women.'<sup>36</sup> I hope to embrace the traditions of metaphor, as Irigaray does, and to also allow them to blossom and change without constantly being reduced.

The chapters in this book address the legal complexities of a world where plants are known to behave in human-like cognitive ways. Although we are vilified for calling it intelligence, the way plants function using distributed cognition creates a call for new legal and political approaches to earth or plant jurisprudence. The eco-punks in chapter two are the artists, philosophers, poets and activists who create opportunities for environmental change. The dyad of ethics versus morality is extended to the law, which inspired the concept that a plant contract might be a means of proposing the right for plants' rights. There have been some epic examples of earth jurisprudence and nature rights globally but they are few and fair. The greatest obstacle, apart from neo-liberal greed, to greater care of our natural tracts of land, is the separation of ethics and morals. This chapter elaborates work done in this legal mine field.

The iterations of the wasteland chapter are not confined to the land but are the outskirts of all kinds of environments, even those under the sea or within a bio-hazard zone. These are the artists who work with the most resilient of plants and engender that suppleness in their own work. Wastelands provide us with provocations about civilising the wilds, creating class structures in terms of 'work' and upsetting the order of how we see plants and their growing environments. Wastelands refer to spaces that have had their usage changed as the result of toxic

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<sup>36</sup> Elaine Miller, *The Vegetative Soul: From Philosophy of Nature to Subjectivity in the Feminine*, Albany: SUNY Press, 2002, 195.

accident, corporate misuse, civic repurposing and via artistic mediation. This chapter grapples with definitions and outcomes of the wasteland.

The history of the Green Man chapter follows the foliage-spewing stone motif that has decorated churches and cathedrals since the 2<sup>nd</sup> and 1<sup>st</sup> centuries AD. Green Man, an architectural iconic motif, emerged seven centuries before the number zero was used in mathematics and is a source of playful and apotropaic wonder. The foliate-faced, leaf-speaking Green Man is especially relevant when considering our human limitations in ‘speaking’ about plant life: we are bound by our ineffective vocabularies in this field of plant studies. This chapter extends how culture/nature interactions in contemporary art now, as with historical Green Man motifs of the past, affect our desire to relate closely to plants. Any human yearning to connect to the plant world in a hybrid mode collapses the distinction between the self and the other. Therefore, this chapter also introduces the abject nature of human/plant hybridity.

Robotany is developed in the next chapter as an emergent order of post-human interspecies connectivity. Extending beyond humanoids or plantoids, this chapter charts the science of plant systems and the technological intersections of plants as networks and computer systems as plants. There is much research into the circuitry possibility and root-probing functionality of plants, mimicked in new technological devices, but artists are also flipping these concepts and engaging with ways to bring attention to the complex vascular and communicative systems of plant life.

Marking the water lily as a feminist plant inveigles the cross-species and eco-feminist concepts by such thinkers as Plumwood and Irigaray and lays bare the differences between sexuate beings that humans repeatedly either ignore or reduce to a unified whole. The secret magic of plant properties has been utilised in dark magic and in Western anaesthetics and medicines too. The ungrounding of plants in the last chapter involves removing them from the environment they cannot be separated from. This disruption is temporary. Ungrounding is, in itself, a metaphor for the way we have mechanised plant life and the need to restore a synergistic relation with the vegetal world. This is not to suggest that we no longer include plant specimens in our medicines, our magic or our artwork but merely to take care when doing so. The geo-philosophy unearths the ugly and mournful last stratum of the earth’s surface, but with a message of future multiple subjectivities, leaving behind the horrors of past exploitation.

Vegetal life and plant thought is an exhilarating topic, especially when grafted to aesthetics and these myriad examples of plant artwork. The chance to grow and effloresce, to allow the appearance of plants to show themselves to us rather than impose how they should look, is the thematic of the writing here. To write without a script, without confinement, without being enclosed by prescribed outcomes is invigorating. It feels like there is the chance to grow from here. That efflorescence is due to Irigaray's suggestion that vegetal and feminine openness toward the other, in themselves, is a way of giving service to life: "Thinking is reunited with growth."<sup>37</sup>

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<sup>37</sup> Michael Marder, *The Philosopher's Plant: An Intellectual Herbarium*. New York: Columbia University Press, 2014, 221-4.