

2018

Rhetoric and Plants

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Rhetoric and Plants

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Submitted in Partial Fulfillment of the Requirements

For the Degree of Doctor of Philosophy in

English

College of Arts and Sciences

University of South Carolina

2018

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Acknowledgements

So many people. Thank you to the First-Year English department at the University of South Carolina for giving me the opportunity to support myself while doing work that I truly care about. Similar thanks are due to the faculty at Northeastern State University, without whom I would never have arrived at USC. I also want to thank not only my teachers but also my students; your thoughts and minds have influenced mine in ways I cannot articulate. Thank you to Lisa Bailey, Erica Fischer, Amber Lee, Trevor C. Meyer, and Nathaniel Street, whose comments and support kept me both grounded and grinding on. Special thanks to my dissertation committee: Jeff Nealon, whose book *Plant Theory* helped me recognize that there is space in the discourse for my weird botanic musings; Mindy Fenske, whose care for the body set my thoughts whirling and whose fascination with the cucumber reinvigorated me at just the moment I needed it; Byron Hawk, whose methodical tenacity keeps me on my toes and my toes on the ground; and my director John Muckelbauer, who has done so much for me and for this project that I can't even make a dent in it here. To keep it short, suffice it to say that John has done everything possible to help me "make it not suck" (that's a direct quote), and any remaining suckiness is my fault, not his. My family has supported me in every conceivable way throughout every endeavor I have ever undertaken, this one not least; I especially want to thank my mother, who gave me the names of the plants. Finally, thank you to my partner, Josh English, who is so integral to my writing and thinking that to call him a co-writer would be an understatement.

Abstract

Rhetoric and Plants asks what happens when we add plants to the various discussions currently developing within rhetorical theory. By taking up current botanical research and some of the rhetorical debates surrounding that research, I posit that plants are creatures and that the botanic engagement with the world has much to teach us about persuasion, communication, and encountering alterity. Specifically, I argue that the sessility of plants makes visible a tendency in our language to privilege the language of going elsewhere, which I term ambulocentrism. Further, the fact that plants engage in behaviors that we have previously thought only conscious beings were capable of engaging in suggests that we must radically rethink the mind/body binary that persists in rhetoric and other discourses, and that the language of mechanism must be included in theory that takes up this distinction. This interrogation of the mind/body binary is continued through an investigation of pain as a bodily experience that only minded creatures are thought to have. Finally, I reflect back on the role that anthropomorphism has played in all of these arguments, in order to begin a theorization of anthropomorphism within posthumanist studies. Plants have only recently been taken up in the humanities as a site of inquiry, and this project closes by pointing toward several other avenues of thought to which botanicity can make a significant contribution.

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Foreword

When I was about eleven years old, I read *Jurassic Park*. I learned quite a bit about dinosaurs, and about science more generally. Most of this learning was informative, though; it added more bits to what I already knew about those things. One minor scene, however, didn't simply provide me with a bit of information, but radically changed *how* I thought. It takes place early in the story, when the main characters, including paleobotanist Ellie, have just arrived at the park and are being given a tour designed to impress them. The plants that make up the landscaping around the pool turn out to have been genetically engineered from ancient DNA, just like the dinosaurs. The dinosaurs, however, are kept in enclosures and precautions have been taken to see if any of them are venomous or otherwise dangerous in ways that are not obvious, while these plants were simply resurrected, grown, and then planted around the pool. This sets off a train of thought for Ellie, in which she reflects on the human tendency to think of plants as objects or as pleasing elements for constructing an aesthetic setting, rather than as living things that fight for resources and defend themselves against attack, with different methods but the same intensity as any other creature. She makes a mental note to speak to the creator of the park about testing these plants for poisonous properties, though this task of course gets subsumed in the events that follow.

It's difficult to say exactly how this brief, fictional reverie on plants impacted my life. Certainly, I did not decide to take up botany, nor did my considerable fascination with animals suddenly become redirected to plants. My parents had made sure that my

brother and I received a woodsy education, so the idea that sampling the wrong berry could be fatal was not particularly revelatory. It wasn't *what* the character said about plants that was so important to me; it was the way she talked about them as creatures. In this sense, this story may also be one of the first instances that I felt myself aware of rhetoric, even if I didn't have a word for it. And while my interests, hobbies, and plans for the future didn't really change, my behavior certainly did. At moments when I might have previously torn a branch off a sapling so I could poke something or draw in the dirt, or when I impulsively reached out to pick a flower so I could take it to my mother and ask its name, I found myself thinking, *They defend themselves like any other creature; they aren't just alive, they want to live*. So I'd find a stick already on the ground, or I'd bring my mother to the flower instead of the other way around. I'd been convinced to resituate what I knew about plants, and both my thinking and my actions were altered.

The primary goal of this project is *not* to inform you about plants. You may find some of it informative, and it also may be the case that, just as with *Jurassic Park*, some of the things it "informs you of" turn out eventually to be untrue. That's okay; if for instance the next decade of research demonstrates that fig trees do not, in fact, selectively drop fruits containing the eggs of cheater wasps, if it turns out that coyote tobacco plants don't actually change their flowers so drastically, even if every single plant story in the following pages requires updating or correction at some point, this dissertation can still achieve its primary goal. That goal is to resituate what you know about plants, such that both your thinking and your actions are altered. For me, this is what it means to call something a work of rhetoric.

That is as close as I'll come to defining rhetoric here, for a few reasons. First, I place great value on the adaptability of the concept of rhetoric. It is notoriously difficult to pin down, to the point that I have started thinking of rhetoricians as "people who use the word rhetoric while insisting that they don't know what it means." Though offering yet another definition of rhetoric would not remove that adaptability, I am more interested in holding the noncertainty open than in making even an ineffectual move to close it down. Second, and more important at the moment: this project seeks to welcome plants into the realm of rhetoric. Doing so can, must, and will change what rhetoric is, in ways that are not at all predictable. While I have tried to offer some suggestions in this direction, codifying those suggestions into a "definition of rhetoric" that accounts for plants is both premature and counterproductive. This work is a beginning, an opening of the door; none of its conclusions are written in stone. In fact, I couldn't even bring myself to conclude it; rather than a conclusion, I chose instead to include an "outroduction" that closes nothing and attempts to point the way toward everything that this dissertation could not—or at least does not—contain.

Choosing what this dissertation would contain and organizing those contents has been the most difficult task of the whole endeavor. I have frequently found myself frustrated because *everything has to come first*. What I mean by that is that each of the conceptual concerns that call for and offer a rationale for the inclusion of plants in creaturely rhetorics seems necessary for the others to make sense: the ethical responsibility that asks us to attend to them is reliant on breaking down the easy distinction between mechanistic beings and minded ones, yet at the same time, the urgency for breaking down the distinction between mechanism and mindedness is reliant

on the ethical responsibility we have toward them, such that both arguments are “necessary” prerequisites for each other. Both of these arguments make the most sense if the rootedness of plant existence is analyzed first, yet it may not be clear why we’re bothering to analyze plant rootedness unless the ethical and/or mechanistic arguments have already been made. In what is perhaps the oddest move of the final arrangement, Chapter 5: Anthropomorphism and Anthropocentrism, introduces itself as an origin story or prequel. Conventional academic writing suggests that this chapter should have immediately followed the introduction, and that is where I had originally envisioned it. However, I ran into both the practical problem of self-reference—that is, the chapter often wanted to refer to other chapters, which caused difficulty if it preceded them—as well as the conceptual problem of naming—that is, part of my argument about anthropomorphism is that it only becomes anthropocentric in the attachment of the name “anthropomorphism,” so I did not want to begin your reading experience by attaching that name to my methods. Chapter 5 needed to precede everything, but placing it first would give the game away. All of which is to say: organizing this dissertation has been an exercise in impossibility.

So *Rhetoric and Plants* does not follow a linear, Point A-to-Point B logic (see Chapter 2: Sex and Ambulocentrism). It can’t, and never could. Adding plants to the discussion changes too much, and carries with it too many entry points, forks in the road, and graftings for a traditionally linear structure to handle. Though on the local level I have tried to transition smoothly and maintain what my students maddeningly call “flow,” a bird’s eye view will reveal a path full of meanderings, backtrackings, and culs-de-sac; or, rather, what a bird’s eye view will reveal is not a path at all but a garden, a

whole made up of many sproutings in carefully chosen but ultimately arbitrary proximity to each other. To read this dissertation from the first page forward is to follow the same path through the garden that I took, which is to bypass (at least for now) the many other available paths. What I have tried to accomplish with the final arrangement is a garden with 1.) a beaten path, 2.) signposts indicating other, less-beaten paths, and 3.) a riotousness that encourages you to beat your own path. Or maybe you could just sit in there a while.

One more story: early in my graduate work, I became interested in scholarship that falls under the broad term “animal studies.” This is perhaps not surprising, given the snapshot of my childhood offered at the opening of this foreword. Soon after developing this interest, I read Jacques Derrida’s essay “The Animal That Therefore I Am (More to Follow)” for the first time, and two things happened. First, I realized I would never, no matter how hard I tried, write anything that was worth a damn. It is my sincerest hope for writers everywhere to find a text or writer that makes them feel this way. I don’t mean that Derrida’s writing is something that I aspire to, or even that it’s something that I will always aspire to. In other words, I don’t mean that I will never be “as good as Derrida.” What I mean, instead, is that each time I consider taking up this text, *The Animal That Therefore I Am*, I can only refer to it or endlessly quote it. It is a text that has so fully infiltrated my thinking that I can say nothing to it or about it. John Muckelbauer once told me of a writer that he felt much the same way toward; that he couldn’t write *about* Nietzsche because he had always been writing *through* Nietzsche. This entire dissertation has been written through *The Animal That Therefore I Am*, though the only contexts in which it is mentioned here are as epigraphs or as brief references that

never get taken up and worked. Each time I tried to address this text, I found that I had turned away from a work on rhetoric and plants and turned instead toward a work on *The Animal That Therefore I Am*. That work may or may not lay in the future for me, but this work is not it. At this particular moment, I have very little I can say about it, which brings me to the second of the two things that happened.

The first time I read the essay that opens *The Animal That Therefore I Am*, I had a crisis of responsibility on page twenty-six. This is the moment where Derrida says that the commercial meat industry would be like the Nazi gas chambers, *if* the Jews were not simply fed to the gas chambers but were fattened and bred so that we never had to stop feeding them to the gas chambers.¹ Everything stopped for me, and all I could do was wander around the house in agony. In hindsight, it was at this moment that I became a humane-itarian, which is the insufferably pretentious term for someone who only eats meat taken from an animal that has lived its life and received its death under humane conditions. I was primed to have this response, as someone who had already spent considerable time thinking about eating ethically, but it was nevertheless these words in Derrida's essay that did this for me.

If it does nothing else, the ultimate goal of this dissertation is that the words in it do something for you. If not wandering around the house in agony, then perhaps being a little more cautious accusing others of anthropomorphism. If not reaching for the stick on the ground instead of the one of the tree, then perhaps being a little more conscious of

¹ "As if, for example, instead of throwing a people into ovens and gas chambers (let's say Nazi) doctors and geneticists had decided to organize the overproduction and overgeneration of Jews, gypsies, and homosexuals by means of artificial insemination, so that, being continually more numerous and better fed, they could be destined in always increasing numbers for the same hell, that of the imposition of genetic experimentation, or extermination by gas or by fire. In the same abattoirs." Derrida, Jacques. *The Animal That Therefore I Am*. Edited by Marie-Luise Mallet, translated by David Wills, Fordham UP, 2008, p. 26.

how much your thinking privileges ambulation. Actually, scratch that—the ultimate goal of this dissertation is for you to learn one thing: always bring your mother to the flower.

Chapter 1: An Introduction to *Rhetoric and Plants*

After spending much of my professional life teaching rhetoric,

I began to wonder what I was talking about.

—George A. Kennedy, “A Hoot in the Dark”

[R]hetoric, at its most elemental, takes place at the level of the creature.

—Diane Davis, “Creaturely Rhetorics”

In my opinion, this choice [to return to the plant world] is more relevant than the very fashionable return to the animal world, because not only does it concern a world that is able to ensure our survival but it also has many things to teach us...

—Luce Irigaray, *Through Vegetal Being*

Foreign Familiars

In “Pushing the Limits of the *Anthropos*,” their guest introduction to the *Philosophy and Rhetoric* special issue *Extrahuman Rhetorical Relations: Addressing the Animal, the Object, the Dead, and the Divine*, Diane Davis and Michelle Ballif focus their push on the limits of the *anthropos* in the direction of (of course) the animal, the object, the dead, and the divine.² These four concepts constitute the loci of the investigations within the special issue, chosen by each individual contributor but encouraged in the original contributor invitation, of which Davis and Ballif include an excerpt. That invitation described the anthropocentric model of rhetoric that requires “at

² Davis, Diane and Michelle Ballif. “Pushing the Limits of the *Anthropos*.” *Philosophy and Rhetoric*, vol. 47, iss. 4, 2014, pp. 346-53.

least one discrete human subject” and called for “essays that take it up in order to expose its limits and presumptions.”³ Though plants make an appearance in the invitation within a list of nonhuman others (along with animals, deities, ghosts, objects, and machines), they have fallen by the wayside by the time the invitation turns to the specifics of its call for essays. As we might expect, then, plants do not appear as a focus of investigation in the published special issue that resulted from the invitation, even though each of the other nonhuman others in the list do. Why?

Perhaps this absence can be considered an example of what Jeffrey Nealon calls “dedicated swerves around the question of vegetable life,”⁴ or perhaps the swerve is *undedicated*, a blind spot rather than a turning away. In either case, the result is that plants occupy a gap as one of the few uninvestigated others within current posthumanist rhetoric, though they share traits with many of the nonhuman others that have been taken up: like animals, plants are living creatures that interact with the world; like objects, plants are seemingly mindless material that nevertheless exhibit the force of agency. We might say that plants constitute the limit between animal and object, at least conceptually, so that they never strike us as the appropriate focus of any particular rhetorical investigation of otherness. But it is that very occupation of the limit between animal and object, between animate and inanimate, between acting and acted upon, that calls for rhetorical attention.

The nonhuman others listed in Davis and Ballif’s call for essays share a commonality, and they share it with plants as well: they are nonhuman others. This commonality brings together many seemingly disparate scholarly and rhetorical concerns,

³ *Ibid.*, pp. 348-9.

⁴ Nealon, Jeffrey T. *Plant Theory: Biopower & Vegetable Life*. Stanford UP, 2016, p. x.

such that this dissertation engages with the broader motivations and interests of much current rhetorical theory while sharing an object of analysis with virtually none.⁵ Diane Davis's work on otherness and "foreigner relations," Thomas Rickert's work on materiality and the ambient conditions of possibility for rhetoric, and Michelle Ballif's investigation of the obvious, particularly the "obvious" distinction between the living and the dead, together triangulate a space in which my project has come to be.

Rhetoric and Plants is, in many ways, taking up the "task" set forward by Davis at the outset of *Inessential Solidarity*: "to examine the implications of this always prior relation to the foreign(er) without which no meaning-making or determinate (symbolic) interaction would be possible."⁶ Davis herself approaches this task by way of Emmanuel Levinas; she describes Levinas's concept of "face" as "the site of "my" encounter with the inassimilable alterity of the other, which provokes an interruption in identification and cognition."⁷ To encounter the face of the other is to experience the impossibility of understanding or grasping otherness, to encounter an excess that cannot be conceptualized. Simultaneously, an encounter with the face necessitates response: "Not every communication with an other signals an encounter with the face. However, once encountered, the face (re)sounds a rhetorical imperative, and nonresponse is not an option."⁸ Later, Davis again takes up the rhetorical imperative that she sees emanating from Levinas's insistence that "the face of the Other first of all *speaks* to me," that "the encounter with *Autrui* occurs solely in the language relation."⁹ Of this "appeal to which I

⁵ To my knowledge, the only published work on plants by a rhetorician is Richard Doyle's *Darwin's Pharmacy: Sex, Plants, and the Evolution of the Noösphere*, discussed later in this introduction. Doyle, however, is more centrally focused on the noösphere than on plants themselves.

⁶ Davis, Diane. *Inessential Solidarity: Rhetoric and Foreigner Relations*. U of Pittsburgh P, 2010, p. 2.

⁷ *Ibid.*, p. 12.

⁸ *Ibid.*, p. 12.

⁹ *Ibid.*, p. 57.

cannot not respond,” she asks, “What else is [Levinas] describing but an exemplary instance of persuasion without a rhetorician?”¹⁰

I wish to naively literalize (to borrow a phrase from Stacy Doris) the notion of “persuasion without a rhetorician,” which I choose to read as “persuasion without a rhetor,” without a speaker, or without intent, or without a subject—without a *human*. If encountering the face of the other is experiencing the impossibility of understanding otherness, then the face of the plant is the most difficult for us to encounter, since for most of us they don’t even yet qualify as “others.” Far more often, plants are conceived as something closer to objects than to creatures, a conception that renders our ability to encounter them as others even more difficult. In this sense, my project takes up Thomas Rickert’s interest in elevating the priority of the material environment so that it is “no longer simply *complementary* to rhetorical theory but rather absolutely *integral* to it.”¹¹ For Rickert, “rhetoric is not, finally, a shift in the mental states of subjects but something world-transforming for individuals and groups immersed in vibrant, ecologically attuned environments.”¹² Plants have traditionally been conceived of as “environment” that human “individuals and groups [are] immersed in,”¹³ *Rhetoric and Plants* argues that they also constitute “individuals and groups” that are “immersed in...environments” of which humans are a component. As such, rhetoric is “something world-transforming” not only for humans but also for plants and, indeed, for all nonhumans.

¹⁰ *Ibid.*, p. 57.

¹¹ Rickert, Thomas. *Ambient Rhetoric: The Attunements of Rhetorical Being*. U of Pittsburgh P, 2013, p. xiii.

¹² *Ibid.*, p. xv.

¹³ I have been unable (so far) to source the reference, but gardeners, naturalists, and other plant enthusiasts frequently use the phrase “big green wall” to describe how most people perceive the plant life around them. I have even heard ethnobotanist Marc Williams suggest that simply being able to identify the plants in a particular area by name can allow people to distinguish shades of green that were previously indistinguishable to their eyes.

Much work is needed, however, to even begin seeing plants as individuals or as others that we might encounter through rhetoric. One method that *Rhetoric and Plants* employs in order to begin this task is a deliberate questioning of the received or assumed knowledge that underwrites common conceptions of botanicity or “plantness.” In some instances, this questioning may initially come across as splitting hairs, as mere thought experiment, or even as totally asinine. However, such impressions may be based in deeply rooted and long-held assumptions about botanicity that have been or are being seriously challenged, even if they haven’t yet significantly changed our general concept of plantness. Michelle Ballif makes a similarly “asinine” claim when she posits a “certain uncertainty...regarding the border between the living and the dead,”¹⁴ a border that, for most of us, could not be more certain than it appears to be. It is that very obviousness, though, that seems to draw Ballif’s attention; in seeking to produce a new way of thinking, Ballif chooses as her starting point the serious interrogation of a deeply assumed knowledge. This strategy appears as a necessity in *Rhetoric and Plants*, since the resistance to changing our thinking about plants is so strenuous that actually effecting that change requires some pretty bold claims—for instance, that plants can remember and learn, that they can make decisions, and that they can feel pain. In each case, I proceed by positing a “certain uncertainty” and following where it leads.

Plants are simultaneously foreign and familiar. They are so unlike us that we must often be reminded that they are living creatures, and even when we remember that they are alive, we tend to believe that this “aliveness” is the only thing we share in common with them. At the same time, they are familiar in the sense of being ever-

¹⁴ Ballif, Michelle. “Zombies / Writing: Awaiting Our Posthumous, Monstrous (Be)Coming.” *Writing Posthumanism, Posthuman Writing*, edited by Sidney I. Dobrin, Parlor Press, 2014, pp. 79-98.

present. For those of us fortunate enough to live in areas where plants grow abundantly, they easily slide out of our purview and into the realm of vague “scenery.” Even those who spend most of their time in the concrete jungle are nevertheless surrounded by plants, or at least plant body parts: cotton clothes, paper cups, wooden floors and furniture, and, of course, most of the food in your apartment were all, at one point, rooted and growing. They are familiar in a second sense as well, though: we think we know them. Or, at least, we tend not to be curious about them. To some extent, it’s easy to see why—humans, and especially human children, tend to be curious about things that they can observe. You can poke a bug and watch it do interesting things, but you cannot easily watch the interesting things that a shrub does when poked. Children assume they know the shrub, because there does not seem to be anything beyond the surface to be known. Foreign and familiar, alien and ubiquitous, plants are known and dismissible things. As such, they offer an excellent point of intersection between Davis’s ethics, Rickert’s ambience, and Ballif’s uncertainty. In the beginning, though, this project began to take its shape out of inquiries into another group of nonhuman others—that is, out of animal studies.

Other Animals; Other Creatures

It could be said that animals entered the field of rhetoric in 2011 with the publication of *Philosophy and Rhetoric*’s forum “Addressing Animals,” which is made up of short meditations on animality in rhetoric by Debra Hawhee, Diane Davis, and John Muckelbauer. These introductory meditations—one might even call them sketches—attempted to open the question in a few specific directions. Hawhee’s “Toward a Bestial

Rhetoric”¹⁵ zooms in on George A. Kennedy’s “A Hoot in the Dark” and calls for furthering the work he began by considering the actual animals (that is, not only and not especially the metaphorical ones) that have populated rhetorical texts from the very beginning. Indeed, Hawhee has taken up her own call in her most recent book *Rhetoric in Tooth and Claw*,¹⁶ a full-length treatment of the interest in classical rhetoric’s animal familiars that we can see germinating in “Bestial Rhetoric.”

Muckelbauer’s “Domesticating Animal Theory”¹⁷ sniffs after several crisscrossing trails of thought and arrives at four potential paths for animal rhetoric going forward: problematizing the distinction between instinctive/mechanistic/animal reaction and deliberate/reasoned/human response; dethroning symbolic communication as the “primary and definitive” concept of communication; learning to treat “rational political discourse” as one force among others, rather than as the only and final arena for civic and social concerns; and resisting the impulse to continue extending humanist qualities or positionalities, particularly “rights,” out to include animals. In other words, Muckelbauer here insists that an animal rhetoric would not simply take up animality and continue along the same path it was already on; rather, taking animals seriously requires fundamental reconceptualizations of some of rhetoric’s most basic assumptions, practices, and curiosities.

Davis’s “Creaturely Rhetorics”¹⁸ continues her interest in the prior rhetoricity (that is, prior to speech, or reason, or intent) on which rhetoric always depends, and

¹⁵ Hawhee, Debra. “Toward a Bestial Rhetoric.” *Philosophy and Rhetoric*, vol. 44, iss. 1, 2011, pp. 81-7.

¹⁶ Hawhee, Debra. *Rhetoric in Tooth and Claw: Animals, Language, Sensation*. U of Chicago P, 2017.

¹⁷ Muckelbauer, John. “Domesticating Animal Theory.” *Philosophy and Rhetoric*, vol. 44, iss. 1, 2011, pp. 96-100.

¹⁸ Davis, Diane. “Creaturely Rhetorics.” *Philosophy and Rhetoric*, vol. 44, iss. 1, 2011, pp. 88-94.

which she describes as an *ability to be* persuaded, affected, or called to respond rather than an *act* of persuasion, affection, speech or response. She locates the site of this common human/animal rhetoricity not in DNA or evolution, as Kennedy does, but in corporeality, shared among all living creatures. While this dissertation responds to a greater or lesser degree to each of the calls put forward by these three sketches, it is Davis's corporeally located prior rhetoricity that truly demands an encounter with plants. If rhetoric is "an underivable obligation to respond that issues from an irreducible relationality;"¹⁹ if "[a]ny creature capable of even minimal self-reference is already *in* language...already *practicing rhetoric*;"²⁰ if "rhetoric, at its most elemental, takes place at the level of the creature,"²¹ then we can no longer justify writing plants out of the rhetorical discussion. One goal of this dissertation is to establish plants as encounterable others, fellow corporeal creatures with whom we share certain fundamental aspects of corporeality and with whom we are always in relation. Unlike animals, however, the particular "rhetorical imperative" issued by plants is rarely heard and even more rarely answered. It is for this reason that we must begin to turn in their direction.

Scholars engaged in animal studies have in many ways begun this investigation already, asking us to consider the ways that we speak to and about other animals, and the ways they might "speak" to us, even though we are unable to easily claim intention or subjectivity on their part. Donna Haraway's *When Species Meet* considers the entanglements with other animal species that make "my" consciousness possible, and approaches other animals from the position that philosophical angst over whether we can

¹⁹ *Ibid.*, p. 89.

²⁰ *Ibid.*, p. 92. Original emphasis.

²¹ *Ibid.*, p. 89.

know anything about the interiority of an animal mind is just so much wheel-spinning. She is responding, of course, to Jacques Derrida's question of "whether one can know what *respond* means."²² Haraway wants to see Derrida "become curious,"²³ to "respond to [the] invitation"²⁴ that his cat may have been offering on that morning in that bathroom. Haraway's critique of Derrida is interesting to me for two reasons. First, perhaps he did accept the invitation. *The Animal That Therefore I Am*, in which Derrida records this encounter with his cat, is concerned with certain philosophical questions and uses the cat-encounter as a method of framing the discussion. It would not be necessary or useful for Derrida to include the fact that, in addition to feeling shame at his nudity, he also blurted out "Who's a fwuffy kitty?" (although it would have been delightful). The second and more important reason that I'm interested in Haraway's critique is that it dismisses the project that Derrida is engaged with, dismisses the very question that Derrida sees as central: Derrida asks, "Can I know what *respond* means?" and Haraway answers, "Why are you asking that instead of responding?"

I belabor this exchange because it gives voice to what I see as the twin anxieties within animal studies, anxieties that are worthwhile to maintain and that I wish to carry into an investigation of botanicity. Derrida sits on one shoulder and whispers that we can't ever know the other, and to presume that we can is dangerous both to our thinking and to real living bodies in the world. Haraway sits on the other shoulder and whispers that we still have to *do* stuff. The tension between these two positions seems to arrest both action and thought: how can we act before we understand, and how can we begin to

²² Derrida, Jacques. *The Animal That Therefore I Am*. Edited by Marie-Luise Mallet, translated by David Wills, Fordham UP, 2008, p. 8.

²³ Haraway, Donna J. *When Species Meet*. U of Minnesota P, 2008, p. 20.

²⁴ *Ibid.*, p. 22.

understand without having actively engaged? If we can make this double-bind of twin anxieties function to slow down thought and action, rather than arresting them, we might make some progress.

One way that we might—temporarily, in order to avoid arrest—get out of this double-bind is to choose a site of inquiry in which questions of intent and subjectivity do not immediately rear their heads (although such questions will eventually become necessary, as I hope to show). To do this, I turn to plants, to the group of beings that so many taxonomic systems place furthest away from us while maintaining that we share something more than atoms in common. Plants are the living things that Aristotle perceived as having only the minimum necessary capacities for qualifying as “alive.” They have never been granted intent, subjectivity, or consciousness. Throughout most of the history of Western thought, they have not even been granted the capacity to feel or to move their own bodies. Even referring to their bodies as *bodies* seems odd, inaccurate in some way—the phrase “their bodies” carries with it the unspoken baggage of “their minds,” and everyone knows that plants don’t have minds (since they obviously don’t have brains). Although we *know* that plants are living beings that change and adapt to their surroundings, we tend to *conceptualize* them as objects—as part of the scenery or as a resource to exploit. We do not tend to see them as creatures. Some scholarly and popular work coming out of various scientific and philosophical traditions is, however, making some headway in changing this conceptualization.

Plant Rhetorics

Academic interest in the relationships between humans and plants has begun to proliferate over the last few years. Although most of the relevant work I have found is

coming out of the fields of science and philosophy, each of the following works is in some sense concerned with language and its effects. That is, each can and must be read as a work of and on plant rhetoric, though with varying degrees of explicit awareness of the rhetorical concerns being raised. For example, Eduardo Kohn, in his provocatively titled work *How Forests Think: Toward an Anthropology beyond the Human*,²⁵ seeks a posthumanist anthropology but has not yet investigated the rhetorical implications of his own title for the nonhumans to whom he wishes to attend. This “anthropology beyond the human” is investigated within the forest surrounding Avila, a village in the Upper Amazon region of Ecuador. Kohn takes into account the relationships between the Runa villagers and animals, and between Runa villagers and “spirits,” but the relationship between Runa villagers and plants is left uninterrogated; the “forest” of the book’s title is setting, not the site of inquiry, and while Kohn’s attention to animals and spirits may produce an anthropology beyond the human, its omission of plants prevents it from fully charting the ecosystem in which the Runa live.

Simply choosing plants as an object of study does not fully solve this problem, though. Richard Doyle’s *Darwin’s Pharmacy*²⁶ offers an entry point for thinking about plants seducing animals. The success of this seduction has made cannabis arguably the most widespread plant in the world, not only growing but flourishing everywhere that humans live. However, in Doyle’s project, the animal being attended to is the human, so that the seduction is read from a perspective of human sexuality. As the first chapter of this dissertation argues more thoroughly, Doyle’s reading of “cannabinoid porn” serves to

²⁵ Kohn, Eduardo. *How Forests Think: Toward an Anthropology beyond the Human*. U of California P, 2013.

²⁶ Doyle, Richard M. *Darwin’s Pharmacy: Sex, Plants, and the Evolution of the Noösphere*. U of Washington P, 2011.

highlight the pointedly human perspective from which Doyle views plant-human relationships, overturning the notion that plants are servile but leaving firmly in place the notion that our point of view is the meaningful one. I think the argument could be made that our point of view *is* the meaningful one; I don't think I'd fully agree with such an argument, but the case could be made. What we see here, however, is not a defense of this notion that the human perspective is the one that counts, but an absence of attention that allows the notion to stand, at work but uninterrogated.

In some ways, works of popular science tend to avoid this particular slippage by virtue of their attempts to “objectively” examine some aspect of the natural world. Though the meat of his discussion takes up this approach, Stefano Mancuso frames his popular science book *Brilliant Green*²⁷ around several rhetorical concerns. Seeking to translate plant neurobiology into layman's terms, Mancuso associates plant intelligence with the ability to communicate, devoting one of five chapters to the question of plant communication. Mancuso also traces the debate over plant intelligence back to ancient Greece, claiming that many of the historical arguments within this debate “hinge not on science but on sentiment and cultural preconceptions that have existed for thousands of years.”²⁸ He returns to ancient Greece in the conclusion of the book, describing immobility and insentience as attributes that “are not innate properties of plants, but a simple and enduring cultural construct that originated with Aristotle.”²⁹ The central claim of the book—that plants are intelligent—is for Mancuso a question that “comes

²⁷ Mancuso, Stefano and Alessandra Viola. *Brilliant Green: The Surprising History and Science of Plant Intelligence*. Translated by Joan Benham, Island Press, 2015.

²⁸ *Ibid.*, p. 1.

²⁹ *Ibid.*, p. 155.

down to terminology [and which] depends on how we choose to define *intelligence*.”³⁰

After raising these rhetorical concerns, Mancuso—perhaps unsurprisingly—addresses those concerns by presenting us with facts, presuming that if only he can show readers that their conceptions are really misconceptions, then the two-thousand-year-old “simple” cultural construct will be easily rectified and overcome.

Matthew Hall’s *Plants as Persons: A Philosophical Botany*³¹ tracks human-plant relationships through several schools of moral and religious thought, including classical Greek philosophy, Hinduism, and paganism, among others. Hall seeks “to survey a number of plant knowledges in order to uncover the most appropriate human rendering of plant life...[as well as] to locate the most appropriate human behavior toward plants.”³² His concern for, on the one hand, an “appropriate” human conceptualization of plants and, on the other, an “appropriate” human ethics towards them serves to illustrate how a project can move forward through the twin anxieties posed by Derrida and Haraway: the anxieties of thought and of action. I don’t, however, necessarily share Hall’s view that productive concepts and behaviors can be “uncovered” or “located” within established moral traditions. Instead, our very orientations toward thinking and toward ethical action are called into question by botanicity, such that we must be prepared to forge new renderings of plants and new behaviors toward them. Relying too heavily on previously developed concepts risks a shallow or inaccurate depiction of the very beings that are ostensibly under investigation.

³⁰ *Ibid.*, p. 4.

³¹ Hall, Matthew. *Plants as Persons: A Philosophical Botany*. State U of New York P, 2011.

³² *Ibid.*, p. 3.

This risk is made manifest in Elaine Miller's *The Vegetative Soul*,³³ which sets its sights on "the metaphorical use of language to describe political subjects when it is applied to the realm of nature, and, conversely, the language used to describe nature when it is employed to legitimate particular descriptions of human subjectivity and intersubjectivity," referring to this site of inquiry as a "rhetoric of description."³⁴ Miller is interested in descriptions due to the fact that "such uses of rhetoric, because of their subtlety, are often overlooked." Miller sees a potential in plant metaphors for a feminine subject that can be differentiated from the masculine "animal" figuration of subject. Miller's book locates itself in the works of Kant, Goethe, Hölderlin, Hegel, and Nietzsche, with a final chapter devoted to tracing the vegetative soul through some twentieth-century continental philosophy such as Derrida, Deleuze and Guattari, and Irigaray. One consequence of focusing her inquiry on metaphors of plants and animals is that a concern for actual, particular plants (and, with the exception of the human, animals) is noticeably absent from Miller's work. While such concerns might be outside the scope of her project, Miller does not address this choice as a choice, instead remaining silent on the question of whether the metaphorical appropriations of plantness within philosophy are in any way an accurate depiction of plant existence. Further complicating this issue is the gendered nature of her project; the alignment of the feminine with the botanic has long existed (often to the detriment of both women and plants) and utterly ignores the very different, very *nonhuman* registers of sex and gender inhabited by plant bodies.

³³ Miller, Elaine P. *The Vegetative Soul: From Philosophy of Nature to Subjectivity in the Feminine*. State U of New York P, 2002.

³⁴ *Ibid.*, p. 4.

Michael Marder's *Plant-Thinking: A Philosophy of Vegetal Life*³⁵ describes itself as being grounded in animal studies, much as my own project does. Marder finds the most engaging works on animality to be the ones that are interested in the "intersection of ethics and ontology,"³⁶ and this intersection serves as the site from which Marder's argument begins. Thus *Plant-Thinking* asks: "How is it possible for us to encounter plants? And how can we maintain and nurture, without fetishizing it, their otherness in the course of this encounter?"³⁷ Marder offers a succinct run-down of some of the most common problematic moves in thinking about plants, drawing attention to the ways that we often relegate them to mere scenery, attend to them only for their use value, nominalize them into classificatory systems, or position them as a "vanishing mediator" (via Hegelian conceptualism in particular) rather than as living beings.³⁸ In its attempt "to give a new prominence to vegetal life ... and, second, to scrutinize the uncritical assumptions on the basis of which this life has been hitherto explained,"³⁹ *Plant-Thinking* accomplishes its goal, simultaneously performing a sweeping critique of metaphysics and offering a fascinating vegetal reconstruction of the notions of identity, autonomy, and relationship to world.

However, this work suffers from a problem similar to that identified in Miller's *The Vegetative Soul*, in that it rarely if ever spends any time considering an actual, *specific* plant. This problem, though, manifests differently here; while Miller's articulated interest in metaphor seems to offer something of an unarticulated justification

³⁵ Marder, Michael. *Plant-Thinking: A Philosophy of Vegetal Life*. Columbia UP, 2013.

³⁶ *Ibid.*, p. 2.

³⁷ *Ibid.*, p. 3.

³⁸ *Ibid.*, p. 5.

³⁹ *Ibid.*, p. 3.

for the omission of actual plants, Marder actively argues for attention to particularity and difference:

What does metaphysics have to do with plants? What can this group of heterogeneous beings, as different from one another as a stalk of wheat and an oak tree, tell us about being “as such and as a whole,” let alone about resisting the core metaphysical values of presence and identity that the totality of being entails? A pessimistic response to these questions is that metaphysical violence seeking to eliminate differences—for instance, between a raspberry bush and moss, or a mayflower and a palm tree—results in a reduction of the bewildering diversity of vegetation to the conceptual unity “plant.” *The plant* cannot offer any resistance to metaphysics because it is one of the impoverished products of the metaphysical obsession with primordial unity[.]⁴⁰

This sounds like an introduction to a piece that will be characterized by deep engagements with particular plants and attention to the differences between them. On the contrary, Marder proceeds to argue that in constructing the unity “*The plant*,” the metaphysical tradition “inadvertently confers on [plants] a crucial role in the ongoing transvaluation of metaphysical value systems.”⁴¹ In other words, Marder’s response to his own call for attention to difference is to continue collapsing plants into a general unity that simply offers a “different” value system.

Offering up a few specific examples of different plants (“a raspberry bush and moss”), while perhaps *acknowledging* their difference, does not constitute *attention to* difference. Nowhere in the following pages does Marder investigate the ways that a

⁴⁰ *Ibid.*, p. 54-5. Original emphasis.

⁴¹ *Ibid.*, p. 55.

raspberry bush might figure autonomy differently than moss, say. Though Marder's generality renders *The plant* as a positive unity rather than a negative one, the practice leads him to idealize plantness in a way that does not stand up to close scrutiny. For example, the fig-wasp—whose offspring are incubated by the fig tree on the condition of pollination and killed by the fig tree if this condition is not met—might take exception to Marder's claim that "the non-economic generosity of the plant-soul, giving itself without reserve to everything and everyone that lives, transcribes vegetal democracy into an ethical politics, free of any expectations of returns from the other."⁴²

Jeffrey Nealon's *Plant Theory: Biopower & Vegetable Life*⁴³ takes up a similar approach to Marder's in that Nealon is concerned with the presences and pointed absences of plants in certain philosophical texts; in this case, Nealon is interested in Foucault, Derrida (by way of Aristotle and Heidegger), and Deleuze and Guattari. Unlike Marder, Nealon's focus is solely on those texts; although he concludes by pointing to some of the shifts in thinking that his investigation suggests are now necessary within the larger discussion of biopolitics, he is not looking to describe a "botanopolitics," nor is he treating plants as the solution for a dissatisfying political atmosphere. As such, the fact that the work contains no extended examinations of how certain plants engage with the world does not come across as a risky omission, as it sometimes does in Marder.

What Nealon's book does make clear is that the growing community of plant theorists can no longer get away with mentioning but not engaging with each other. As the most recent publication in this section, it mentions all of the aforementioned works on plant rhetorics, but it does so primarily in the preface and almost entirely on a single

⁴² *Ibid.*, p. 52.

⁴³ Nealon, Jeffrey T. *Plant Theory: Biopower & Vegetable Life*. Stanford UP, 2016.

page. This conversation has grown large enough that is no longer sufficient to simply list out the scholars working with plants as a nod to the scholarship that exists. Just as Nealon recognizes that he must make space within an existing community for his own contribution to biopolitics, the sub-field of plant studies has reached a point—just—at which no plant theorist is working in isolation. In order for us to begin to work through some of the problematics outlined above that botanicity has brought to the surface, engagement with the community *as* a community is necessary.

To close, we turn from the most recent publication to the oldest and, possibly, the strangest. Francis Hallé's *In Praise of Plants*⁴⁴ differs substantially from all of the aforementioned works in several ways. In fact, it is a difficult book to describe due to the ways it resists easy classification as a type of book. It is a work of pop science that nevertheless delves into both current biochemical research and philosophical questions of immanence and transcendence, expecting its readers to keep up. It is a polemic against the “bias bordering on injustice”⁴⁵ that erases plants from so many conversations about life and living things, but it spends very little time either presenting or arguing with its opponents, instead launching itself into a proliferation of investigations and meditations that functionally argue rather than explicitly arguing Hallé's case. It is an informational book, collecting previous scientific and scholarly knowledge rather than posing new data or ideas, yet it is structured not as a set of progressive informational lessons but as a loose configuration of minute inquiries that delve quite deeply into a specific idea, but only for two or three pages; then it whisks the reader off to some other minute inquiry that may or may not have been suggested by the previous one. *In Praise of Plants* is, in short, the

⁴⁴ Hallé, Francis. *In Praise of Plants*. Translated by David Lee, Timber Press, 2002.

⁴⁵ *Ibid.*, p. 29.

most botanic piece of writing described here. Plants are not only the subject matter being discussed (in great detail and with a deft movement between specific description and theorization); plants are also the models on which Hallé's approach to writing is based. While my project may end up looking quite a bit like a standard academic argument, my process of writing is taken directly from my process of reading Hallé.

Botanicity

Plants are rooted, fixed, non-ambulatory. Though they do move, they do not go elsewhere of their own volition. When we begin to consider botanicity, rootedness is the quality that makes itself known again and again, in various manners and intensities. It conditions the ways that plants sense, take in energy, defend themselves, and reproduce. Plant reproduction, in particular, makes visible the significance of being rooted; as such, Chapter 2: Sex and Ambulocentrism, takes up plant sexual behavior as its starting point. The most common type of plant by far is the angiosperm or flowering plant, and the most common form of pollination for flowering plants is by far biotic pollination, or pollination via third-party organism. In other words, "normal" plant sex involves two or more plants that stay where they are and persuade some animal pollinator to approach them. All available means are deployed: the shape, color, and scent of a flower all work together to seduce certain pollinators, often very specific ones. Food is offered in the form of nectar. The fly orchid even goes so far as to mimic not only the appearance but even the scent of female wasps in order to seduce male wasps into pseudocopulation, a sexual act that is unfulfilling for the wasp but quite satisfying for the orchid.⁴⁶ After pollination occurs and a seed develops, the plant once again persuades ambulatory

⁴⁶ Vereecken, Nicolas J. *et al.* "Integrating Past and Present Studies on *Ophrys* Pollination: A Comment on Bradshaw *et al.*" *Botanical Journal of the Linnean Society*, vol. 165, 2011, pp. 329-335.

organisms to do its bidding, again offering food in the form of fruit so that a hungry animal will intentionally eat the fruit and unintentionally drop the seed further from its parent than gravity would allow.

Botanic persuasion, rooted in rootedness, seeks first to influence *distance*. It works upon desires that are already present within its others and convinces them to come closer or to move away. The relationship between a botanic self and an other is not fundamentally a linguistic one, but a spatial one, which nevertheless also necessitates response. Of course, there is already an implicit relationship between language and space. As Derrida makes visible in “Signature Event Context,”⁴⁷ the word “communication” indicates not only verbal communication but spatial communication as well, as in a passage that communicates between rooms or a disease that is communicable between people. We carry this figure of moving across space into even our casual discussions of speaking and writing, describing ourselves as trying to *get an idea across*, or to *reach* a particular audience. We *make moves* in our academic work, and we *follow* lines of thinking. We *go into* detail. We *walk through* an idea, explaining it *step-by-step*. The metaphors of moving from one place to another are certainly not the only metaphors we use to discuss writing, but they are pervasive. They indicate a largely unrecognized prejudice within the English language, a prejudice I call *ambulocentrism*. Our bias in favor of that which goes elsewhere is only made visible through attention to creatures that do not.

Chapter 3: Mechanism and Mindedness seeks to simultaneously decouple mind from brain in the general sense while reinstituting mind as embodied in the case of

⁴⁷ Derrida, Jacques. “Signature Event Context.” Translated by Samuel Weber and Jeffrey Mehlman, *Limited Inc*, Northwestern UP, 1988.

humans. In other words, we closely associate mind with brain such that creatures without brains or with “inferior” brains are written out of mindedness, even while we continue to conceptualize our own minds as somehow distinct from the body part that primarily produces it. Chapter 3 troubles both these tendencies, offering ways that brainless bodies, including plants, demonstrate evidence of mind or what we might want to call response, while gesturing toward brain research that suggests our human, minded responses are simply one subtype of mechanistic, embodied reaction. The goal is not to jettison response or reaction, mind or mechanism, nor is it the goal to “grant” mind to plants or unproblematically bring them into the category of minded or conscious beings. Rather, the goal is to reconfigure the ways we think about mind, body, purposiveness, and mechanism, such that humans no longer get to claim ownership over response and distance from reaction.

Chapter 4: Pain and Ethics attempts to reconfigure some of the assumptions underlying our creaturely ethics. If we wanted to trace the history of modern animal ethics to a starting point, we could do worse than to locate that starting point in Jeremy Bentham’s famous footnote to *An Introduction to the Principles of Morals and Legislation*, which states that “the question is not, Can [animals] *reason*? nor, Can they *talk*? but, Can they *suffer*?” Animal ethics begins with a question about the capacity to experience pain. From our perspective in 2018, this may seem like a question with a self-evident answer, and I believe Bentham intended it that way. Of course animals can suffer. The risk of asking a rhetorical question, however, is that your audience may answer it differently than you assume they will. At certain times and in certain places,

the answer to this question was no, animals do not feel pain.⁴⁸ The enormity of the consequences of this attitude, of defining a living being as incapable of experiencing pain, can be seen even with the most cursory glance at the practice of anesthesia-free vivisection.

Suggesting that plants might feel pain is, of course, absurd on the face of it. The very fact that everyone knows that they do not, though, is precisely what makes it a question worth examining in this project. Just as Michelle Ballif posits a “certain uncertainty”⁴⁹ about the border between the living and the dead in order to interrogate the construction of that border, Chapter 4 posits a certain uncertainty about whether plants can feel pain. Since there is so much inertial resistance to this idea, the method here of positing *uncertainty* is to attempt to make the best possible case that there *is* certainty that plants do feel pain, with the goal of breaking through the resistance by applying enough force in the opposite direction.

If plants can feel pain or something like it—and I would argue that unilaterally and unequivocally denying them this capacity is a rhetorical move that is ultimately self-serving—then they have a different relationship to pain than we and probably most other animals do. Plants offer their body parts as a method of persuasion, a method that has been so successful for certain plant species that they have persuaded us to pollinate them, protect them from harm, spread their seeds far and wide, and to feed and water them. Though they seem to be passive, this survival strategy is a source of great power for these beings who are, each of them individually, entirely at our mercy. This is a form of power

⁴⁸ Ferdowsian, Hope and Debra Merskin. “Parallels in Sources of Trauma, Pain, Distress, and Suffering in Humans and Nonhuman Animals.” *Journal of Trauma and Dissociation*, vol. 13, 2012, pp. 448-50.

⁴⁹ Ballif, Michelle. “Zombies / Writing: Awaiting Our Posthumous, Monstrous (Be)Coming.” In *Writing Posthumanism, Posthuman Writing*, edited by Sidney I. Dobrin, Parlor Press, 2014, pp. 79-98.

that proceeds entirely from persuasion, a persuasion without a rhetor, rooted in rootedness and accomplished by sacrifice rather than by reason. Considering botanicity as a form of alterity challenges us to develop a new understanding of ethics even as it offers us a new ethical model.

Finally, Chapter 5: Anthropomorphism and Anthropocentrism takes up a question that has been more or less implicitly raised at many points throughout Chapters 1-4, both argumentatively and methodologically—the question of whether anthropomorphism has a place in posthumanist work generally and this work specifically. Though anthropomorphism has been addressed in posthumanist rhetoric and science studies, it most often is addressed in passing and usually with an eye toward simply defending one's work from the critique that its language is too humanizing, a critique that I identify as “the anthropomorphism accusation.” Chapter 5 begins a fuller treatment of how the anthropomorphism accusation functions, as well as how anthropomorphism functions, of its relationship to anthropocentrism, and of its potential role in science studies.

Rather than closing with a “conclusion,” the dissertation opens up yet more avenues of pursuit in Chapter 6: Outroduction. One goal of this project has been to bring plants into the posthumanism discussion, because thus far they have been largely absent from that discussion. That absence means that there were numerous potential entry points for the case that we should attend to plants, and quite a few of those entry points had to be weeded out. As an invitation for further study, Chapter 6 attempts to articulate that weeding out process while showcasing the “weeds,” in the hopes that they can be replanted in the future.

Another way to think of this structure is that we first begin, in Chapter 2, with an investigation of the ways that rhetorical attention to plant bodily capacities, particularly reproduction, can provide us with new ways of thinking about language such that features of the language like ambulocentrism become visible. Chapter 3 then investigates the ways that the language of mechanism and mindedness (which is of a piece with the language of reaction and response) figures our categorizations of plant bodily capacities (as well as other creatures' capacities, including our own). Chapter 4 addresses the nexus point of mind and body, interrogating the difficulties and ramifications of presuming what bodies are capable of experiencing. Chapter 5 steps back to consider one of the fundamental questions raised by this project, while the Outroduction gestures toward other projects that have now become possible.

The basic assumption of this dissertation is that plants are creatures. We must begin to turn toward them, not only in creaturely rhetorics but in posthumanist rhetorics more broadly. This is not simply a matter of coverage; as I hope to show here, rhetorical attention to botanicity is “something world-transforming” for all involved.

Chapter 2: Sex and Ambulocentrism

All species have a notion of emptiness, and yet / the flowers don't quit opening.

—Terrance Hayes, “Lighthouse’s Guide to the Galaxy”

And from the vantage of this being-there-before-me it can allow itself to be looked at, no doubt, but also—something that philosophy perhaps forgets, perhaps being this calculated forgetting itself—it can look at me. It has its point of view regarding me.

The point of view of the absolute other...

—Jacques Derrida, *The Animal That Therefore I Am*

Compiling and engaging rhetorical bestiaries might help us to better understand the absolutely unfathomable range of rhetoric without pretending to make it fathomable, and to better appreciate all the “whos” we are here with without presuming to homogenize this radical heterogeneity.

—Diane Davis, “Some Reflections on the Limit”

Perspective

In her afterword to *Rhetoric Society Quarterly*’s 2017 special issue *A Rhetorical Bestiary*, Diane Davis’s call for “new compendiums of bestial rhetorics”⁵⁰ invites a collective effort to interrogate the perceived limit between animal and human, and to thereby open the perceived limit of rhetoric. In many ways, the present work takes up that call, though it would be a misnomer to call it a *bestiary*. Instead, let’s call it a

⁵⁰ Davis, Diane. “Some Reflections on the Limit.” *Rhetoric Society Quarterly*, vol. 47, iss. 3: *A Rhetorical Bestiary*, 2017, p. 281.

topiary, a field or little place composed of plants that have been trimmed and shaped by human (in this case, *my*) hands. In this topiary, as in all topiaries, animals are present but plants are the main event; certain plants have been selected for cultivation while others have been weeded out; the selected plants do not appear in their “natural” form, nor could we know what their “natural” form might have been simply by looking at them here; and the forms they do take have been shaped in order to establish a pattern, suggested by their own growth and behavior but ultimately produced by human desire and labor. The constant presence of the human in this description may seem to run counter to the post-humanist goal of dislodging the human from the center of rhetoric; however, decentering the human does not mean jettisoning the human from posthuman studies entirely. To attempt such an erasure would be to risk erasing the conceptual and material impact of human presence on the very nonhumans we wish to attend.

Case in point: say we wanted to study the sexuality of the garden cucumber. *Cucumis sativus* prefers to grow as a monoecious individual, which means that an individual plant will produce some flowers with functional (male) stamens and some flowers with functional (female) carpels. In 1960, C.E. Peterson published his development of a gynoeceous cultivar of the garden cucumber, allowing growers to plant fields full of wholly female individuals, with a few monoecious individuals kept around for pollinating purposes.⁵¹ Thinking from the perspective of “the plant itself,” it is tempting to read this as a normalizing intervention by human cultivators into a group of bodies whose sexual organs do not suit our needs: we want large quantities of offspring, so we force femaleness onto cucumber bodies in order to reap the rewards of their newly

⁵¹ Wehner, Todd C. “A Brief History of the Development of Cucumber Cultivars in the U.S.” *Cucurbit Genetics Cooperative Report*, vol. 14, 1991, pp. 1-4.

designed sexual relationships. However, the sexuality of the original(?) *monoecious* garden cucumber also cannot be separated from human intervention, as it has been domesticated for over 5,000 years; we can't trace the cucumber's "wild" progenitor with anything approaching certainty. This does not mean that we should try harder to consider "the plant itself" in isolation from the human—quite the contrary, any analysis of cucumber sexuality must take the intervention of humans into account. As far back as our knowledge reaches, there is no "plant itself" for us to consider.

So if we don't want the human to be the center, and we can't simply think about the plant in isolation from the human, then our impulse might be to focus on the relationships between plants and humans; that is, to think about the site of interaction, conflict, and collaboration between the two. Richard Doyle's *Darwin's Pharmacy* takes just such an approach, offering a way of thinking about plants seducing humans.⁵²

For example, in chapter 6, "The Transgenic Involution," Doyle investigates the ways in which images of cannabis buds function as "cannabinoid porn," emphasizing that, while enthusiasts will be enthusiasts, "there is a function to images of cannabis in the community of growers and users that is simply absent in many other demographics of intoxication."⁵³ The function that is present in these images and not in others is something much more like the pleasurable gratification of pornography than demonstration, community bonding, or art, as images function in other substance-centered communities. While cannabis communities certainly use images to pass along

⁵² Doyle, Richard M. *Darwin's Pharmacy: Sex, Plants, and the Evolution of the Noösphere*. U of Washington P, 2011. Though the main project of the book is an investigation of the ways that plants have contributed to the development of human consciousness, "plants seducing humans" is the subset of that investigation that I am here interested in.

⁵³ *Ibid.*, p. 238.

information, to make people feel like part of the group, and to share creative ideas that have been inspired by the object of their enthusiasm, this community also shares pictures of cannabis plants that are simply meant to be *drooled over*. Doyle also goes out of his way to ensure that, in calling these kinds of images “porn,” the connotation of this pleasure as a specifically sexual one is not lost, suggesting that the frequency of close-up images of cannabis buds function to map a “veritable becoming insect”⁵⁴ of the human viewer—that is, a becoming-sexual-partner to the plant.

Doyle’s approach decenters humans in many ways, figuring the human as pollinator, servicer, even worshipper rather than as the consumer, the served, god-like and in control. Even so, it is also worth remembering that, from the perspective of the plant, there is no “human becoming insect” happening here—that is, there’s nothing perceivably *sexual* happening to the plant at all when it’s getting its picture taken, and who knows what is happening to the plant by the time a human is looking at the picture.⁵⁵ The idea of the human viewer “becoming insect” in response to cannabinoid porn makes sense only from a pointedly human perspective. Of course, there is nothing inherently wrong with this; if we are to understand humans as situated within relationships with other living things, then we must consider how those relationships work on us.

This example does, however, demonstrate a risk that is always present in the work of posthumanist rhetoric, which is the risk of maintaining a purely human position of observation when nonhumans are the observed. Would we find it so easy to describe the event of a human viewing *human* pornography as a “veritable becoming-lover?” What

⁵⁴ *Ibid.*

⁵⁵ This observation offers an opportunity to say something about all pornography and its relationship to time and distance that, unfortunately, I do not have the space to delve into here.

might such a description erase or eclipse with regard to the lived experience of the photographed? Doyle echoes others, notably Michael Pollan, in championing the cannabis plant's desirability as a survival strategy and in pointing to our widespread cultivation and maintenance of these plants as an opportunity to ask "who is really domesticating whom?" In our human-viewing-human-porn scenario, can we still come to the simple conclusion that the porn "star" has found a wildly successful survival strategy, since our desire for porn means that we will never allow porn stars to go extinct? Do we still find it easy to unproblematically assert that the ubiquity of the adult film industry should have us asking who is really subjugating whom?

This line of questioning is not intended as an argument that taking or looking at pictures of plants is the same as producing or looking at human pornography, nor that the consequences are the same for the cannabis plant as they are for the sex worker, or for the viewer of the two images. Rather, it serves to illustrate that we are capable of immediately recognizing the problematic nature of a singular perspective when the "other" possible perspective is a human one, but it's easy, all too easy, to forget that nonhumans have perspectives as well, and that attending to theirs will vastly complicate any given analysis that involves them. Whether it has eyes to look or not, "the absolute other" "has its point of view regarding me,"⁵⁶ and not only me but everything else that it is in relation with. Holding that reminder in mind, then, this chapter will attempt to think plants from a vantage point that more closely approximates their own. It is impossible, of course, for any of us to actually stand at such a vantage point, or to know whether we "really" stood there or not (this impossibility is taken up in greater depth in Chapter 5). I

⁵⁶ Derrida, Jacques. *The Animal That Therefore I Am*. Edited by Marie-Luise Mallet, translated by David Wills, Fordham UP, 2008, p. 11.

don't think the exercise is less valuable for its impossibility; quite the contrary, since the goal of attempting this impossible task is not to know but to learn, and learning happens in the doing rather than the having done. What we will do, then, is consider the bodies and behaviors of certain kinds of plants, as well as the words we use (and the words we *could* use) to describe them. In order to place a limit on the endless possible paths available to us, we will focus on that part of plants' lives that, due to our own human interests and desires, is arguably the most readily available to us: their sex lives. Such an investigation begins with the material realities of plant bodies which allow/encourage and disallow/inhibit certain kinds of behaviors.

Plant Sex and Sexuality

Our categories of plant sexual identities rely on a collapsing of the concepts of male and female even as we maintain the words themselves. Plant maleness and femaleness are rarely manifested as explicitly demarcated male individuals and female individuals. Instead, most plants have both "male" and "female" body parts. In some cases, male flowers and female flowers are produced by the same individual plant, as in the monoecious cucumber; in most cases, though, an individual plant produces flowers that are "hermaphroditic," having both functional (male) stamens and functional (female) carpels. Botanical discourses, including agricultural and gardening discourses, have maintained the archaic synonymy of "hermaphroditic" and "bisexual," terms that have diverged in the discourse of human sexuality. When referring to humans, "bisexual" now indicates the object choice of the individual being described; when referring to plants, "bisexual" continues to indicate a body type rather than an object choice, as it once did for humans as well. Further, botanical discourse offers a third synonym for

“hermaphroditic” and “bisexual:” *perfect*. A perfect flower is a bisexual flower, a hermaphroditic flower, a flower that is both male and female—and the most common kind of flower. Bisexual bodies are the norm for plants. Even in the comparatively few cases where individual plants are demarcated as rigidly male or female (referred to as dioecious plants), the notions of male and female must be rethought in order to account for the bodies and behaviors they describe. Sexuality in plants, regardless of whether the plant or even the flower in question is male or female, is invasive and receptive, active and passive, cooperative and manipulative, exploiting and exploited.

The most common form of pollination is biotic pollination, which is when a third-party organism (usually an insect) is required. This means that a hermaphroditic interspecies threesome is the plant version of “vanilla.” In order to actuate this practice, plants must seduce the animal, a seduction that is most often accomplished through an offering of some part of the plant for the animal’s consumption; indeed, to be consumed by an animal seems to be the sole function of nectar. Seducing the animal pollinator to actively penetrate the flower is non-“gender”-specific: whether for the purpose of having pollen collected (from “male” stamens) or having it delivered (to “female” carpels), the plant passively receives the pollinator’s intimate touch upon its flower. Simultaneously, the plant actively manipulates the pollinator in order to produce the sort of intimate touch that most benefits the plant.

Trumpet pitchers are an excellent example of this. Due to their bisexual bodies, most flowers, unlike most animals, are capable of self-fertilization (even if they need or prefer a bit of bestiality to accomplish it). Even with this capability, however, plants have elaborate mechanisms and behaviors to avoid self-fertilization. Trumpet pitchers

are carnivorous plants that must negotiate attracting insects for food and attracting insects for pollination. In order to avoid accidentally eating the pollinator, the flower grows at the end of a long stalk, well away from the deadly pitcher. The flower hangs down from the stalk like a lampshade, so that the pollinator tends to enter it by moving upward from below. As it does so, it must force its way up and over the lip of the style, on which are located the stigmas. If the pollinator is already carrying pollen from another individual, some of the pollen will be brushed off against the stigmas, ensuring cross-fertilization. After the pollinator deliberately collects nectar and inadvertently gets invaded by new grains of pollen, it instinctively heads toward a sliver of light to get out of the flower—a sliver that appears above the pollinator’s head, again encouraging it up instead of down. This keeps the pollinator from brushing the stigmas on its way out, thereby avoiding the self-fertilization of the individual.

Like most other flowering plants, trumpet pitchers are perfectly capable of re-producing—producing the same again—in the strictest sense: producing an offspring that is as close to a clone as can be achieved through sexual methods. However, plants go to great lengths to resist re-producing in this way, instead favoring cross-pollination, a kind of creation via remixing. Strict re-production is the least desirable kind of production, so the plant avoids it by orchestrating a very precise interaction based on the animal pollinator’s already present tendencies (like flying toward light to get out of an enclosure).

When plants develop a monogamous relationship with one pollinator species, pollination itself can take some very odd forms. Orchids of the *Ophrys* genus are known for their unusual pollination method, which is referred to as “pseudocopulation.”

Pseudocopulation is exactly what it sounds like. The orchids each have a specific pollinator species; they produce flowers that look very much like the females of their pollinators, and they emit scents that mimic the females' pheromones, which is even more powerfully attractive than the visual mimicry offered by the petals.⁵⁷ The pollinator is fooled into attempting to copulate with the flower, and in so doing it inadvertently becomes covered with pollen. It then passes along the pollen when it tries to have sex with the next flower, completing and extending the pollination cycle.

The orchids described in Deleuze and Guattari's *A Thousand Plateaus* are probably members of the *Ophrys* genus, as some *Ophrys* species specialize in attracting particular wasps as pollinators. Deleuze and Guattari equalize the power balance between orchid and wasp, describing "a veritable becoming, a becoming-wasp of the orchid and a becoming-orchid of the wasp,"⁵⁸ in which the two simultaneous becomings form a reciprocal loop of deterritorialization and reterritorialization. This analysis provides us with a way of thinking the wasp and the orchid as forces within an assemblage, becoming-orchid-wasp, rather than as fully distinct entities that sometimes interact with each other: *a* wasp and *an* orchid. The equalizing of the power balance is misleading, however. As far as we know, the fooled wasp gets nothing but sexual frustration from the orchid, which does not even bother to produce nectar.⁵⁹ The frustrated wasps will eventually wise up and stop visiting the orchids, but they have solutions for that, as well: a single orchid produces an enormous number of seeds to

⁵⁷ Vereecken, Nicolas J. *et al.* "Integrating Past and Present Studies on *Ophrys* Pollination: A Comment on Bradshaw *et al.*" *Botanical Journal of the Linnean Society*, vol. 165, 2011, p. 330.

⁵⁸ Deleuze, Gilles and Felix Guattari. *A Thousand Plateaus: Capitalism and Schizophrenia*. Translated by Brian Massumi, U of Minnesota P, 1987, p. 10.

⁵⁹ Vereecken *et al.* p. 330.

mitigate the risk of a low pollination rate, and some species develop slight variations within individuals to prevent their pollinators from learning to avoid them.⁶⁰ In this relationship, the orchid's desire is the driver of both its own becoming-wasp and the wasp's becoming-orchid—the orchid, not the wasp, is calling the shots.

But the best example of a plant in a position of power is the case of the fig tree-fig wasp mutualism. A “fig” is best understood not as a fruit, but as a kind of inside-out flower cluster. That is, if we were to cut open an unripe fig, we would find many small flowers, with their “heads” toward the center of the fig and their “stems” attached to the inner wall. The pollinator wasp seeks out an unripe fig, which is said to be in its “female phase,” and pushes its way into the fig through an opening that exists for this purpose. In actively pollinated figs,⁶¹ the wasp then lays its eggs while distributing the pollen it has collected. Then the wasp dies and the fig begins its “interfloral phase,” in which both fig seeds and wasp larvae develop. Finally, during the fig's “male phase,” the wasp eggs hatch, mate, collect pollen, and tunnel their way out to search for an unripe/female-phase fig to start the cycle over again.⁶² In their study of this relationship across several fig tree species, Charlotte K. Jandér and Edward Allen Herre found that when wasps “cheat,” or lay eggs while choosing not to perform their pollinating duties, the tree drops the fig containing the “cheater” wasp's eggs and kills them. They further found that the stricter

⁶⁰ Singer, Rodrigo B. “The Pollination Mechanism in *Trigonidium obtusum* Lindl (Orchidaceae: Maxillariinae): Sexual Mimicry and Trap-flowers.” *Annals of Botany*, vol. 89, 2002, p. 161.

⁶¹ “Actively pollinated” refers to fig-wasp relationships in which the wasp deliberately collects pollen from male flowers, stores it in special pouches, and deliberately distributes it to female flowers. “Passively pollinated” fig flowers are arranged in such a way that pollination happens incidentally, and are not part of the study referenced below.

⁶² The fig trees fruit year-round.

these “sanctions” are, the less likely that individuals within the pollinator wasp species will choose to cheat.⁶³

I want to take a moment to step away from plant behaviors themselves and expand on the ways that we talk about those behaviors. Before getting into that, though, it seems useful to clarify and summarize the fig tree-fig wasp relationship described above. Normally, the wasps actively pollinate the tree, and in exchange are allowed to lay their eggs within some of the figs. The wasps are capable of choosing not to pollinate, but if they do choose to cheat in this way, the tree will drop the figs containing wasp eggs. Not all of the figs, but specifically the ones with baby wasps inside. The stricter the tree is about killing baby wasps, the more likely the wasps are to collect and distribute that tree’s pollen. The tree’s strong-arm tactic tends to work.

Within this study that demonstrates a remarkable manifestation of agency in what has largely been presumed to be a passive species, authors Jandér and Herre go out of their way to avoid using *sanction* as a verb; the tree never sanctions the wasp to influence its behavior, rather the tree has sanctions and the sanctions influence the wasp’s behavior. The closest the authors come to using *sanction* as a verb is in the final section, while speculating on the reason “for trees to apply ‘sanctions.’”⁶⁴ Although *sanctions* is still being used as a noun, this sentence constructs the trees as actively doing something, unlike the other sentences in which the term *sanctions* appears. In this sentence that figures the tree as capable of applying sanctions, the word *sanctions* is suddenly in

⁶³ Jandér, K. Charlotte and Edward Allen Herre. “Host Sanctions and Pollinator Cheating in the Fig Tree- Fig Wasp Mutualism.” *Proceedings of the Royal Society of London B: Biological Sciences*, vol. 277, iss. 1687, 2010, pp. 1481-88.

⁶⁴ *Ibid.*, p. 1486.

quotation marks,⁶⁵ as if the term must be marked as figurative the moment it begins to sound like it's something the trees are choosing to do, or even just doing. Even more telling is the paragraph that begins the paper's final section, in which the authors turn to other mutualistic relationships as a way of contextualizing their findings. In this paragraph, the creatures that are named as examples of mutualisms are fish, insects, and humans. In this paragraph that is empty of plants, the term *punish* entirely takes the place of the term *sanctions*, and it is the only paragraph in the entire paper where any term at all replaces *sanctions*. Apparently, animals can punish cheaters, but plants cannot, even though the other aspects of these mutualisms are considered analogous enough that the authors consider their plant study to be a contribution to scientific understanding of animal mutualisms as well.

We can tell this story differently. We can figure the fig tree as prostitute, offering the use of its body as an exchange commodity. Or we can describe the fig tree-fig wasp relationship as a landlord-sharecropper relationship, in which the landlord/tree always holds the power to boot the sharecropper/wasp off its property. Or we can imagine the fig tree as a Hollywood crime boss; in this you-scratch-my-back-I'll-scratch-yours story, everyone happily prospers together until the boss gets crossed, at which point he murders your whole family. Or—and this might or might not sit more easily with some—we can go ahead and use the verb *punish* to describe what the fig tree is doing, just as we use it to describe the behavior of reef fish, social insects, and humans. My goal here is not to wag a finger at Jandér and Herre themselves, which would suggest that the problem would be solved if these two people had just used their words differently. Rather, the example of

⁶⁵ The only other instance where this word appears in quotation marks is the very first time it is used.

Jandér and Herre functions to throw this tendency into stark relief, providing an especially visible instance of a pattern that pervades botany in particular and discourse on plants more generally.

Scientific Metaphor

Within botany, the reluctance to describe plants in terms that do not “properly” belong to them can be sketched by examining the intense and ongoing reaction against a single book published in 1973: *The Secret Life of Plants* by Peter Tompkins and Christopher Bird, which argued among other things that plants can read human thoughts.⁶⁶ Perhaps the best testament to the book’s pop influence is that it is credited with the craze of talking to your plants to improve their health, a myth that probably everyone is familiar with to some extent, even if that familiarity derives from films or novels rather than directly from *Secret Life*. Among botanists, this book has become almost a metonym for plant pseudoscience, in large part because it was so popular and therefore influential on the social imagination. It is invoked either with derision—if you want to dismiss someone else’s botanical research, just say that it sounds an awful lot like *Secret Life*—or with lamentation:

[P]ublicity from pop culture in the 1970s, generated by the controversial book ‘*The Secret Life of Plants*’ (including paranormal claims that plants are attuned to human emotional states), stigmatized any possible similarities between plant signaling and animal neurobiology. Many plant biologists, wittingly or unwittingly, practiced a form of self-censorship in thought, discussion and research...The prohibition against anthropomorphizing plant function perpetuated

⁶⁶ *The Secret Life of Plants* gets a fuller treatment in Chapter 3; here, I only want to point briefly to its influence on the language and study of botany.

ignorance of the work of [certain] outstanding researchers...and so prevented the investigation of the roles of electrical long-distance signals [in plant physiology].⁶⁷

Brenner et al. here make some pretty strong claims about bias and stigma in the history of plant signaling research, and link those claims directly back to *Secret Life*, as it is the only work mentioned by name as contributing to this stigma. Jandér and Herre's decision to toggle between *sanctions* when describing trees and *punish* when describing fish, insects, and humans exemplifies the anxiety that Brenner et al. are concerned about. To say that "fig trees punish cheater wasps" sounds an awful lot like *Secret Life*; saying instead that "cheater wasps face sanctions" is a lot safer, even if *sanctions* has just as much metaphorical connotation as *punish*.

It is, not, of course, a novel idea to suggest that science is rife with metaphors that it does not always choose to recognize as such, and that it might do well to think long and hard about them. Emily Martin's "The Egg and the Sperm" famously critiques the tendency in biology texts to describe human reproduction in stereotypically gendered terms, such as the inherent passivity of the egg/female and the inherent activity of the sperm/male. The hope is that her exposure will cause the stereotypes to "lose much of their power to harm us."⁶⁸ Martin is not claiming that her work on these biology texts will completely disempower all the sexist stereotypes that appear within them; instead, she hopes that the cultural stereotypes that she uncovers in her work will no longer be

⁶⁷ Brenner, Eric D., Rainer Stahlberg, Stefano Mancuso, Jorge Vivanco, František Baluška, and Elizabeth Van Volkenburgh. "Plant Neurobiology: An Integrated View of Plant Signaling." *Trends in Plant Science*, vol. 11, 2006, p. 414-15.

⁶⁸ Martin, Emily. "The Egg and the Sperm: How Science Has Constructed a Romance Based on Stereotypical Male-Female Roles." *Signs*, vol. 16, no. 3, 1991, pp. 485-501, p. 486.

presented as inherent and natural with the full backing of biological science. As she notes toward the end of her essay, “the models that biologists use to describe their data can have important social effects,” including the continued entrenchment of “some of the hoariest old stereotypes about weak damsels in distress and their strong male rescuers.”⁶⁹ Her final call to action is a call to “wake up sleeping metaphors in science,”⁷⁰ a description that is itself a metaphor casting the feminist scholar in the role of Prince Charming and scientific metaphors in the role of the sleeping princess. Once woken, the metaphors/princess will have been robbed “of their power to naturalize our social conventions about gender.”⁷¹ While it’s unclear whether Martin prefers a scientific language that is metaphor-free, she is certainly suspicious of metaphors that humanize: “Even if we succeed in substituting more egalitarian, interactive metaphors to describe the activities of egg and sperm...we would still be guilty of endowing cellular entities with personhood. More crucial, then, than what *kinds* of personalities we bestow on cells is the very fact that we are doing it at all.”⁷² Martin warns that the power of science to bestow personalities—and therefore personhood—on cells “could ultimately have the most disturbing social consequences,” especially regarding women’s reproductive rights.⁷³

⁶⁹ *Ibid.*, p. 500.

⁷⁰ *Ibid.*, p. 501.

⁷¹ *Ibid.*, p. 501. While the idea of waking up something that’s asleep does not *necessarily* invoke the fairy tale of Sleeping Beauty, Martin’s piece itself both directly invokes this particular story to describe one of the texts it critiques, and indirectly invokes it by reading the common narrative of human biological reproduction as “a scientific fairy tale” that consistently casts the egg as the passive receiver of the sperm’s intimate touch, while the sperm is cast as the active “rescuer” whose touch brings life to the inert egg.

⁷² *Ibid.*, p. 501.

⁷³ *Ibid.*, p. 500-01. Twenty-five years later, we might respond to this by *wishing* that those who seek to restrict reproductive rights could be so swayed by scientific authority.

Martin's insightful analysis works to bring attention to the ways that cultural norms are embedded in scientific discussions as well as interpretations of scientific results. That is, metaphor and stereotype not only affect the ways that scientists are able to talk about their findings—they also affect what those scientists are able to “find” in the first place, as Martin notes in her discussion of the research that, using technologies that had been available for a century, finally countered the idea of sperm as strong and penetrating and instead showed that the egg is the more “forceful” and active party in the sperm-egg encounter.

However, as Martin's call to “wake up sleeping metaphors” demonstrates, it's not so easy to avoid “bestowing personalities” or granting intentionality. The problem with the metaphors that Martin identifies in biology is not that they are the “wrong” metaphors or even that they're damaging, but that they work to produce a single, monolithic view that preempts new ways of thinking about sperm, egg, ovulation, fertilization, and all the other components of human reproduction that are under scrutiny here. We should take up Martin's call to disentrench these metaphors and the assumptions that both constitute and follow from them, *not* because they are unworthy of entrenchment (which might imply that some other metaphor is), but simply because they are entrenched. In Martin's case, the damsel-in-distress/knight-in-shining-armor narrative was the dominant metaphor that required scrutiny; in botany, humanizing/animating metaphors are stringently avoided in favor of mechanizing/passivizing ones, which means that an attempt to take Martin's work seriously within an essay on plants produces a piece of writing that is everywhere

bestowing on nonhumans the very “personalities” and “intentional actions” that Martin would have us avoid.⁷⁴

Ambulocentrism

At least in part, we tend to avoid describing plants with humanizing/animating metaphors in favor of mechanizing/passivizing ones because we associate animatedness with movement, and especially with ambulation. We now recognize that plants move their own bodies in various ways, such that even laymen who don’t have much interest in plants tend to understand that phototropism is a movement the plant is performing. This understanding is surprisingly recent, though; until Erasmus Darwin began publishing his wildly popular botanical work near the turn of the 18th century, the broadly accepted explanation for phototropism was that the sun dried out the side of the plant that was nearest to it, which caused the plant to seem to bend toward the sun—the plant was acted upon by the sun, rather than acting itself in response to the sun. Similar mechanistic explanations were provided for other observable plant movements as well: they’re not moving, they’re being moved. The notion that plants were essentially insensitive and immobile had been handed down from Aristotle and Theophrastus—who had never seen a Venus flytrap or a *Mimosa pudica*—and persisted even as seventeenth-century experimental evidence of sensitivity and mobility was growing.⁷⁵ The work that really began to unseat this notion was Erasmus Darwin’s *The Loves of the Plants*,⁷⁶ which

⁷⁴ Humanizing metaphors, or anthropomorphisms, are addressed more fully in Chapter 5. Here, I simply want to establish a link between our reluctance to “humanize” plants and our conceptualization of them as non-animated or unmoving.

⁷⁵ For a fuller history, see Webster, Charles. “The Recognition of Plant Sensitivity by English Botanists in the Seventeenth Century.” *Isis*, vol. 57, iss. 1, 1966, pp. 5-23.

⁷⁶ Published as a stand-alone piece in 1789, then republished in 1791 and thereafter as part of a collection titled *The Botanic Garden*, comprised of *The Economy of Vegetation* (Part I) and *The Loves of the Plants* (Part II).

personifies various plants as human lovers based on their varying reproductive organs and habits, and contains copious footnotes and endnotes which offer scientific explanations of particular plants as they appear in the poem. It was not scientific evidence alone that began overturning the “motionless” conception of plants, but the power of a work that treated scientific research as a backgrounded supplement to an extended, meticulously crafted metaphor that reveled in its anthropomorphism.

Bolstered in the twentieth century by filming techniques that make slow movements more visible to us, plant mobility is now accepted as the rule rather than the exception (as Venus flytraps and *Mimosa pudica* were once considered exceptions after their discovery in the Americas). Rootedness, though, remains an aspect of botanicity that is central to plants’ engagement with the world. With very few exceptions,⁷⁷ plants move but do not locomote—they do not go elsewhere of their own volition. As such, plant persuasion is based primarily in getting someone else to come to them. It is a sessile persuasion, an attraction or seduction that asks another creature to approach by offering something to that creature, whether nectar or the (false) promise of copulation or a tasty body part that can be torn away and eaten. The rootedness of plants is one of their defining features, such that any rooted or seemingly rooted creature, like sponges or sea anemones, were once thought to be plants. Even so, it is surprisingly easy to forget this fundamental difference between plants and human animals, as Francis Hallé reminds us when he demonstrates that plants are not “lacking” in capacities or inferior to animals,

⁷⁷ Some algae locomote via flagella, for instance. However, like fungi, algae are considered a separate group of organisms that share some characteristics with plants but are not categorized as such. Also worth mentioning here are the reports of the “walking palms” of Central and South America, which still crop up every now and again; the function of the walking palm’s stilt roots has not been settled, but the likeliest explanation for their apparent ability to walk around the forest is that, when knocked over, they re-root in their new location and then right themselves.

but instead have exactly those body parts and abilities that one would expect in a rooted, photosynthesizing creature.⁷⁸

More importantly for our purposes here, it is easy to forget or to never have recognized the force that locomotion, and specifically ambulation, wields in our discourse. Especially with regard to discourse about thinking, writing, communicating, and rhetoric more generally, our language is pervaded by what I am calling *ambulocentrism*. “Ambulocentrism” refers to the linguistically embedded tendency to describe communication in terms of going elsewhere, of someone or something moving from Point A to Point B. “Ambulo-” specifically refers to walking in order to highlight the greater force of ambulatory terms as compared to other forms of locomotion (and, I’ll admit, for aesthetic reasons as well—“locomocentrism” sounds like a postmodern Beach Boys cover band); however, since the concept developed from attention to sessility, any form of going elsewhere is included in “ambulocentric language.”

Together with the metaphors of vision, the metaphors of going elsewhere dominates rhetorical discourse. Consider the following paragraph from the preface of Thomas Rickert’s *Ambient Rhetoric*, in which I have bolded instances of ambulocentric language:

Terroir **conveys** a great deal about the subject of this book, which is ambient rhetoric. Rhetoric, while traditionally taken as a discursive, intentional art, can and indeed must be grounded in the material relations **from which it springs**, not simply as the situation giving it its shape and exigence, but as a part of what we mean by rhetoric. Rhetoric in this sense is ambient. It surrounds; it is of the

⁷⁸ Hallé, Francis. *In Praise of Plants*. Translated by David Lee, Timber Press, 2002.

earth, both in the most mundane of senses and in the Heideggerian idiom, as that which **withdraws from** meaning and relationality, which I will address later in the book. Rhetoric **impacts** the senses, **circulates** in waves of affect, and **communes** to join and disjoin people. It **gathers and is gathered** by things not as a denial of the social but as an essential complement to it. Rhetoric may give priority to the expressly salient, but the salient must take part in and **emerge from** the ambient. We can think this in terms of Richard Lanham's notion of rhetoric as the economics of attention, provided we expand the concept of attention beyond that which is limited to the subjective, intentional, or merely cognitive; attention would thereby **come** to include the materiality of our ambient environs, our affective comportments, the impact of that which **escapes** conscious notice, and the **stumbling block** presented by the finitude of knowledge when facing the plenitude of the world and its objects. Attention attends to the salient, but the **bringing forth** of salience is itself a complex activity that has ambient dimensions. This poses a problem, as I will show, when the salient is taken for all that there is or all that matters. It poses a problem precisely because it excludes from discussion how the ambient dimensions of a rhetorical situation constitute the ways things **emerge** and show up for us in the first place. Thus, to attend to the sensory and meaningful characteristics of a wine (or any food or drink, actually) **leads from** subjective experience **back to** "the surroundings and settings," as Amy Trubek puts it in her discussion of *terroir*.⁷⁹

⁷⁹ Rickert, Thomas. *Ambient Rhetoric: The Attunements of Rhetorical Being*. U of Pittsburgh P, 2013, p. x-xi. Please forgive the lengthy passage; since I'm interested here in a pattern within the "minor" language, the bits and pieces that connect the more substantive ideas, quoting small passages and unpacking them doesn't exactly do the trick.

While it's true that some of these instances of ambulocentric language are arguable—is “bringing forth” or “gathering” really a metaphor of going elsewhere?—it's also true that there are other instances, like the various uses of “taken,” that arguably should be included. I'm less interested in digging up etymologies in order to decide for certain which words and phrases “truly” count as ambulocentric than I am interested in simply demonstrating the pattern. The pattern tends to be even more ambulatory when we talk to students about their writing, especially when we are critiquing their writing for improvement. We say things like, “Where is this essay going? Who are you trying to reach? I feel like it's missing a step or two. Walk me through your thinking. We haven't yet arrived anywhere; what's your landing place? I see where you're headed, but I'm not quite on board yet.” In other words, ambulocentrism is often amplified when we're discussing what writing *should* do. Yet, in the above passage we can see that it persists to a lesser degree even in a work that seems well-situated to have noticed this tendency. This says less about Rickert or ambient rhetoric than it does about plants: thinking about plants and thinking from the perspective of plants is what makes ambulocentrism visible.

It's not that ambulocentric language is inherently a bad thing, and I'm not calling for it to be scrubbed from our discourse; I doubt that would be productive even if it were possible. I am suggesting, though, that it is an aspect of our language that has been at work for quite a while, unacknowledged by us and therefore, perhaps, working against us at times. For instance, I can imagine a non-teleological argument, one that is not concerned with arriving at any particular telos, allowing telos back in the door via ambulocentrism, all unaware and to the argument's detriment (“telos,” of course, being one way of describing “Point B”). I can also imagine that same argument intensifying its

ambulocentrism in order to create a tension between the goal and the method of achieving the goal. Before that can happen, though, the writer must *notice*, must become aware of ambulocentrism—otherwise, it isn’t available for crafting. Similarly, I can imagine different versions of Rickert’s passage above: one in which ambulocentric language is avoided in favor of non-ambulocentric language in order to intensify the decoupling of rhetoric from an intentional, conscious, (i.e., locomoting) subject, and I can just as easily imagine one in which the ambulocentrism is cranked up to eleven as yet one more method of emphasizing the vibrant agency of the environs that surround us. In either case, *attention* to ambulocentrism is the prerequisite, and attention to the sessility of botanicity is what has, at least here, conditioned that possibility.

The sessile nature of plant existence has far-reaching impact on the ways we conceive of and categorize them. The next chapter, “Mechanism and Mindedness,” investigates how plant sessility and presumed immobility have contributed to the construction of plants as non-minded beings, as well as how the recognition of plants as moving beings raises questions about their internal communication systems. This curiosity in turn raises the possibility of something like a plant “mind,” but does so in such a way that “mind” itself is rethought. As we come to understand human consciousness as something produced by “mechanistic” functions, it becomes more and more difficult to relegate other creatures to the category of mechanism while reserving the notion of “mind” for ourselves.

Chapter 3: Mechanism and Mindedness

To understand the brain, claimed Turing, all we have to do is to
simulate its numerous functions by just writing enough code.

— György Buzsáki, *Rhythms of the Brain*

O body swayed to music, O brightening glance,/

How can we know the dancer from the dance?

—W.B. Yeats, “Among School Children”

The said question of the said animal in its entirety comes down to knowing
not whether the animal speaks but whether one can know what *respond* means.

And how to distinguish a response from a reaction.

—Jacques Derrida, *The Animal That Therefore I Am*

Minds, Bodies, and Brains

The previous chapter referred to Erasmus Darwin’s writing as a pivotal factor in overturning the widespread assumption that plants do not move. Darwin’s *The Loves of the Plants* was published in 1789 and was so popular that he received an advance roughly equivalent to 180,000 current US dollars for his next work, *The Economy of Vegetation*, published in 1791.⁸⁰ The same year, these two works were collected in *The Botanic Garden*. The book’s juxtaposition of poetry and natural history results in a hybrid work that may seem more at home in the postmodern era than at the turn of the 19th century.

⁸⁰ King-Hele, Desmond. “Note [foreword].” *The Botanic Garden 1791*, The Scholar Press, 1973. No pagination.

Both Part I, *The Economy of Vegetation*, and Part II, *The Loves of the Plants*, are poems with extensive “philosophical notes.” In *The Economy of Vegetation*, the goddess of botany speaks through the poet to address the nymphs of fire, the gnomes of earth, the nymphs of water, and the sylphs of air; the footnotes and endnotes that accompany it expound on all sorts of scientific subjects, from hydrogen to sea-ice to magnets, which are referenced in the poem. *The Loves of the Plants* follows a similar form; the poem personifies various plants as human lovers based on their varying reproductive organs and habits, and nearly all of the notes comprise scientific explanations of particular plants as they appear in the poem. The poems are meticulously crafted, and the science is meticulously researched. Due to the popularity of *The Botanic Garden*, Erasmus Darwin’s ideas and insights were widely disseminated to popular, literary, and intellectual audiences. However, Darwin’s full theory of the nature of plants does not get articulated until the publication of *Phytologia* in 1800, in which his study of plant physiology and mobility leads him to consider whether plants might have a brain.

Phytologia; or The Philosophy of Agriculture and Gardening, begins with a truly astounding claim: “that vegetables are in reality an inferior order of animals.”⁸¹ To demonstrate this proposition, Darwin first argues for the individuality of buds, rather than the entire plant constituting a single individual. He then argues that since plants are “immoveably fixed to the soil, from whence they draw their aliment ready prepared, and this uniformly,” while animals move about “in search of food, and take that food at considerable intervals of time,” it makes no sense to deny animality to plants on the basis

⁸¹ Darwin, Erasmus. *Phytologia; or the Philosophy of Agriculture and Gardening. With the Theory of Draining Morasses, and with an Improved Construction of the Drill Plough*. J. Johnson, 1800, p. 1.

of their lacking “muscles of locomotion” or “mouth, throat, stomach, and bowels;”⁸² no stationary, continuous eater would need any of these parts. Instead, the parts that would be expected if plants were indeed “an inferior order of animals” are absorbent vessels, umbilical vessels, a pulmonary system, an arterial system, glands that separate fluids and secretions, reproductive organs, and a system of muscles, nerves, and “common sensorium,”⁸³ which we will return to later.

After completing the section arguing for the individuality of buds, Darwin spends the next 130 pages performing physiological analyses of exactly those parts and systems that comprise the above list, devoting a section to each. Throughout these analyses, Darwin persistently claims that each particular plant part is analogous to parts found in animals: “The existence of that branch of the absorbent vessels of vegetables, which resembles the lacteals of animal bodies[...];”⁸⁴ “The seeds of vegetables are a sexual offspring corresponding with the eggs of animals[...];”⁸⁵ “Their [i.e., plant glands] effects are however as evident as those of the glands of animals in the secretion or production of various fluids[...];”⁸⁶ “After the seeds are thus produced, the parent bud dies; and in this respect the buds bear a very great analogy to those annual insects, which change from their caterpillar or larva-forms, putting forth painted wings and organs of reproduction, and after depositing their eggs cease to exist.”⁸⁷ Throughout these sections, Darwin claims animality for plants boldly and often. However, he is much more careful in “Section VIII: The Muscles, Nerves, and Brain of Vegetables.”

⁸² *Ibid.*, p. 5.

⁸³ *Ibid.*, pp. 6-7.

⁸⁴ *Ibid.*, p. 10.

⁸⁵ *Ibid.*, p. 21.

⁸⁶ *Ibid.*, p. 72.

⁸⁷ *Ibid.*, p. 91.

Here, Darwin must move further away from direct anatomical evidence and instead argue by logical reasoning. He opens the section by acknowledging this: “The various motions of peculiar parts of vegetables evince the existence of muscles and nerves in those parts...though the fibres and nerves, which constitute these muscles, are too fine for anatomical demonstration.”⁸⁸ Instead of anatomical demonstration, Darwin must resort to reasoned conclusions based on behavior. The behaviors and abilities of several particular plant species lead him to the suggestion that plants must have muscles that can contract to produce movement as well as nerves that can sense—for instance, the Venus flytrap must be able to sense when an insect has entered the space between its leaves, and it must have “muscles” that it contracts to catch the insect. From this premise, Darwin further suggests that plants must have “a common sensorium, or brain, where the nerves communicate;”⁸⁹ if this were not the case, how could the part that senses communicate the presence of an insect to the part that moves?

At this point, though, the existence of a common sensorium is a hypothesis. In order to show its validity, certain questions would have to be “answered in the affirmative. Have vegetable buds irritability? have they sensation? have they volition? have they associations of motion?”⁹⁰ Darwin follows with other reasoned arguments that plants do indeed possess all of these faculties. At each step of the argument, Darwin reiterates the ways in which each piece of evidence points to the presence of something like a brain. He seems to recognize, though, how outlandish this must seem, since he shifts from the bold claims of analogy that occur in parts I-VII toward a more timid or

⁸⁸ *Ibid.*, p. 132.

⁸⁹ *Ibid.*, p. 133.

⁹⁰ *Ibid.*, p. 133.

hedged version here. He appears to want to claim a plant brain, but “brain” is too bold a word. He settles for the oft-repeated phrase “brain or common sensorium,” followed by an explanation of what he means by this phrase. The pattern is repeated again and again.⁹¹

It’s tempting to write off Darwin’s outré argument for a plant “brain or common sensorium” as a misguided speculation based on scant or erroneous knowledge, and Darwin himself admits that he does not have enough information to locate it (he suggests that it might be located in the pith, but does not attempt to defend this suggestion as fact).⁹² However, a similar argument is being put forward by some scientists today. Interestingly, the sticking point still seems to be the *language* used to describe plant systems and processes. Everyone agrees that plant cells are able to communicate with each other, but many scientists take issue with the term that has been applied to the study of how such communication happens: “plant neurobiology.”

In 2005, Stefano Mancuso established the International Laboratory of Plant Neurobiology (LINV), and he, along with several colleagues, published an introduction to the concept of “plant neurobiology” in *Trends in Plants Science* in 2006.⁹³ Shortly after, thirty-six fellow botanists published an open letter in *Trends* calling for Mancuso and others to cease using the term “plant neurobiology,” claiming that the term “does not add to our understanding of plant physiology, plant cell biology or signaling” since the authors can “stat[e] simply that there is no evidence for structures such as neurons,

⁹¹ *Ibid.* See pp. 135, 136, and 139 for examples.

⁹² *Ibid.*, p. 139.

⁹³ Brenner, Eric D., Rainer Stahlberg, Stefano Mancuso, Jorge Vivanco, František Baluška, and Elizabeth Van Volkenburgh. “Plant Neurobiology: An Integrated View of Plant Signaling.” *Trends in Plant Science*, vol. 11, 2006, pp. 413-19.

synapses or a brain in plants.”⁹⁴ The same issue of *Trends* includes a response from Mancuso and the original co-authors of the introductory piece, defending the term “plant neurobiology.” They begin somewhat snarkily: “No one proposes that we literally look for a walnut-shaped little brain in the root or shoot tip or some myelinated super-conducting nerve cells in plants.”⁹⁵ They go on to argue that Alpi et al. have missed the point and state that “we are less concerned with names than with the phenomena that have been overlooked in plant science.”⁹⁶ However, Mancuso and his colleagues *do* seem to be concerned with names, judging by the following question that they pose:

If one wants to figure out how a sunflower plant is able to propagate an action potential over a distance of 0.3 m (a length of more than one thousand cells), then with what related phenomenon should we start our comparisons if not those of animals?⁹⁷

This statement, coupled with Baluška and Mancuso’s call for “removing the old Aristotelian schism between plants and animals”⁹⁸ in 2009, suggests a deliberate and purposeful decision to take up the term “plant neurobiology” and indicates that it is far from an incidentally derived name that they are not much concerned with.

At bottom, this debate over terminology is based in two different questions. Alpi et al. ask whether the same types of structures are found in plants and animals, and the

⁹⁴ Alpi, Amedeo et al. “Plant Neurobiology: No Brain, No Gain?” *Trends in Plant Science*, vol. 12, 2007, pp. 135-36.

⁹⁵ Brenner, Eric D., Rainer Stahlberg, Stefano Mancuso, Jorge Vivanco, František Baluška, and Elizabeth Van Volkenburgh. “Response to Alpi et al.: Plant Neurobiology: The Gain is More than the Name.” *Trends in Plant Science*, vol. 12, 2007, pp. 285-86.

⁹⁶ *Ibid.*, p. 285.

⁹⁷ *Ibid.*, p. 285.

⁹⁸ Baluška, František and Stefano Mancuso. “Plant Neurobiology: From Sensory Biology, via Plant Communication, to Social Plant Behavior.” *Cognitive Processing: International Quarterly of Cognitive Science*, vol. 10 (Supp. 1), 2009, pp. S3-S7.

conclusion they arrive at is *no*. Mancuso et al. ask whether the same functions are being performed within the processes of plant and animal cell communication, and the conclusion they arrive at is *yes*. The disagreement is not about what structures exist or what functions are being performed, but about whether we should privilege structures over functions in our terminology and therefore in our investigations.

There is a third position within this debate as well, articulated by Anthony Trewavas. Trewavas also responded directly to Alpi et al., arguing that “plant neurobiology” is a metaphor and that “all metaphors have value” and are “an essential adjunct to the imaginative scientific mind.”⁹⁹ While it’s always refreshing to hear a scientist argue from a more rhetorical perspective, Trewavas’s positioning of “plant neurobiology” as a metaphor reads mostly as an appeasement of Alpi et al. Trewavas does passionately defend the role of metaphor in science, but he defends it primarily on the grounds that metaphor can “stimulate the investigative imagination.”¹⁰⁰ In other words, metaphor is a useful thought experiment and to use a metaphor should not be conflated with making a truth claim. This position is based in the idea that “neurobiology” is a scientific term with a very specialized meaning, and to use it loosely would be to blur the distinctions between plant and animal. This is true. The thing about the argument being put forth by many plant neurobiologists, though, is that blurring such distinctions is exactly what they are trying to do. As suggested by the aforementioned call to “remov[e] the old Aristotelian schism between plants and animals,” Baluška and Mancuso are concerned that this conceptual schism has contributed to a thin or

⁹⁹ Trewavas, Anthony. “Response to Alpi *et al.*: Plant Neurobiology—All Metaphors Have Value.” *Trends in Plant Science*, vol. 12, 2007, pp. 231-33.

¹⁰⁰ *Ibid.*, p. 231.

“obscured” understanding of the phylogenetic relationships between living organisms, and are therefore deliberately borrowing the term “neurobiology” and applying it to plants as an attempt to disrupt the schism. So, while it might be a metaphor, it’s not *merely* a metaphor, nor is it *merely* being used to stimulate the imagination; it’s being used as a strategic argument against one of the oldest binaric distinctions within the life sciences: animal/plant.

Even though photosynthesis (or lack thereof) offers the simplest and most basic distinction between plant and animal, Darwin’s *Phytologia* and the plant neurobiology debate both suggest that brains and their concomitant parts are frequently deployed when one wants to either bolster or trouble the distinction. I want to suggest that the reason brains are a focal point for either argument is that the brain is the central figure on the dichotomous spectrum between mind and body. Categorized as body but tightly associated with mind, the brain is the site at which mind and body meet, mesh, collapse, and conflate—the site at which it is least easy to distinguish mechanism from mentality. Brain is tightly associated with mind, which means that when researchers notice behaviors that suggest mindedness, they start looking for a brain (like Erasmus Darwin) or they deliberately begin making analogies to brains (like Mancuso and company). But brain is also strictly categorized as a body part, which means that when scientists like Alpi et al. seek to reify the distinction between plant and animal, they can point to plants’ lack of brain and consider the question of plant mindedness as having been closed. However, the tight and direct association between mind and brain has already become troubled by concepts like emergence, which describes how complex systems like consciousness can be produced by the simple behaviors of non-conscious things, and

extended cognition, which describes how some creatures offload some of their cognitive burden into non-brain body parts or even into materials outside the borders of their bodies.¹⁰¹ If thinking and awareness can be dissociated from brains, then lack of brain doesn't necessarily close the question of plant mindedness, after all.

Mind

In 2014, researcher Monica Gagliano and her team published a paper that sought to establish whether plants could learn.¹⁰² Other research had already shown that plants have a certain kind of “memory” that allows them to adapt, just as animals do. What Gagliano’s experiment sought to identify was a “learned behavioral response” in addition to these previously demonstrated adaptive responses—that is, she and her team wanted to look for evidence of “behavior that an individual develops by being taught.”¹⁰³ She chose *Mimosa pudica* as her subject, probably for the same reason that many other researchers choose this species as a test subject: when disturbed, it folds its leaves up rapidly, one of the relatively few instances of easily visible movement in plants.¹⁰⁴ While the *Mimosa*’s leaf-folding behavior is believed to be an adaptation to help ward off insect predation, the behavior can be caused by a wide range of stimuli, including warming, shaking, and the touch of a human fingertip. Since leaf-folding carries costs (both costing the plant energy to perform and temporarily reducing the plant’s ability to take in sunlight), the *Mimosa* must be able to filter stimuli, ignoring familiar ones that pose no threat, such as the sensation of a neighboring plant brushing against its leaves, while

¹⁰¹ For a fascinating recent example involving spiders and their webs, see Japyassú, Hilton F. and Kevin N. Laland, “Extended Spider Cognition.” *Animal Cognition*, vol. 20, iss. 3, May 2017, pp. 375-95.

¹⁰² Gagliano, Monica, Michael Renton, Martial Depeczynski, and Stefano Mancuso. “Experience Teaches Plants to Learn Faster and Forget Slower in Environments Where It Matters.” *Oecologia*, vol. 175, 5 Jan. 2014, pp. 63-72.

¹⁰³ *Ibid.*, p. 64.

¹⁰⁴ If you’ve never witnessed this before, go Google a video of it. Seriously, I’ll wait.

responding both to familiar ones that *do* pose threats, such as insect feet, and unfamiliar ones that *may* pose a threat, such as human fingertips. If the plant did not have the ability to filter familiar non-harmful stimuli, it would be constantly closing its leaves and this behavior would quickly become a detriment to the species' success rather than advantageous.

In essence, Gagliano wanted to find out whether she could teach the plant to ignore an unfamiliar nonharmful stimulus. She chose falling as the stimulus, dropping potted *Mimosas* from a height of 15 cm, since this stimulus causes the *Mimosa* to fold its leaves even though it's unlikely that any *Mimosas* would have adapted any kind of specific response to falling through the air and then landing. In other words, it is an unfamiliar experience that the *Mimosa* reads as potentially dangerous, though the fall of 15 cm does not actually cause it any harm. To help establish whether any observed behavioral changes could indeed be considered learning, Gagliano tested different plants under different light conditions. The idea was that, if learning was indeed happening, then the plants grown under lower light should be faster to learn to ignore the drop, since these plants would stand to lose more by folding up their leaves for no good reason and missing out on some of that sweet, sweet sunlight.

If you made it through Chapter 2, you can probably guess what's coming next: the *Mimosas* did in fact learn to ignore being dropped, and the plants grown under lower light conditions learned faster. What's more, "plants whose leaf-folding reflex had habituated through earlier training in one light treatment still exhibited the learned behavior in the new light condition almost a month later."¹⁰⁵ In other words, even under differing

¹⁰⁵ *Ibid.*, p. 68.

conditions, the plants remembered to ignore being dropped even though they had not experienced such a sensation in nearly a month.

Gagliano next set out to discover if plants can learn by association.¹⁰⁶ She set up a Y-maze for young pea plants and trained one group to positively associate the wind from a fan with a source of light (the wind and the light always came from the same arm of the Y), while training another group to negatively associate the two (that is, the wind from the fan came from one arm of the Y while the light came from the other arm). After training, the plants were tested to see if they would grow toward or away from the fan, depending on their training, without the presence of a light source. Of the plants trained with a positive association between the light and the fan, 62% grew toward the fan; of those trained to negatively associate, 69% grew away from the fan. In both cases, the last position of the light source prior to testing was recorded and had no apparent effect, indicating that a significant number of plants did indeed learn to associate the position of the fan with the position of the light source, both positively and negatively. In a follow-up, Gagliano further found that this learning is greatly hindered by interference with the plants' circadian rhythms—jet-lagged plants are worse at learning.

Plants also exhibit behaviors that we might call kindnesses. Since Susan Dudley and Amanda File published the first study on the phenomenon of kin recognition in plants in 2007, various plants have been shown to cooperate with close kin, especially siblings, while still competing with other, less closely related plants. For instance, Crepy and Casal's 2014 study found that thale cress will adjust the positioning of their leaves in order to make sure that they don't block the sunlight for their nearby siblings, even when

¹⁰⁶ Gagliano, Monica, Vladyslav V. Vyazovskiy, Alexander A Borbély, Mavra Grimonpez and Martial Depczynski. "Learning by Association in Plants." *Scientific Reports* 6:38427, 2 Dec. 2016.

doing so produces more “self-shading” and is therefore costly to the plant.¹⁰⁷ Similarly, Klein, Siegwolf, and Körner found cooperation when they expected competition: their ground-breaking five-year study of a forest in Switzerland found that tall, healthy trees will share “substantial” amounts of carbon with other trees, even those of different species.¹⁰⁸ The carbon-sharing occurs through the common mycorrhizal network that connects the trees’ root systems. This is the same network—sometimes glibly called the “fungal internet” or “the wood wide web”—that has been popularized by the work of Suzanne Simard, who has found that “mother trees” use it to support their offspring, and that Douglas firs and paper-bark birches will share needed carbon with each other specifically during times of stress.

Concrete resources are not all that’s shared between plants; they also share information. In the next chapter, we will see that plants under attack emit distinct chemical signals which warn other plants to prime their own defenses. Research has shown that, in addition to this kind of plant-to-plant communication, at least some plants also engage in plant-to-animal communication.¹⁰⁹ One example of such research is Kessler and Baldwin’s 2001 study in *Science*, which found that coyote tobacco plants¹¹⁰

¹⁰⁷ Crepy, María A. and Jorge J. Casal. “Photoreceptor-Mediated Kin Recognition in Plants.” *New Phytologist*, vol. 205, iss. 1, Jan. 2015, pp. 329-38.

¹⁰⁸ Klein, Tamir, Rolf T.W. Siegwolf, and Christian Körner. “Belowground Carbon Trade Among Tall Trees in a Temperate Forest.” *Science*, vol. 352, iss. 6283, 15 Apr. 2016, pp. 342-44.

¹⁰⁹ Once again, the scenario in which this communication has been observed is when the plants are under attack. It’s unclear whether this pattern indicates that self-defense is the only situation in which plants communicate, or whether research has simply not yet found the motivation or methods to test plant communication under other circumstances. Though fungi have been set aside as outside the scope of this dissertation, one potential entry point for thinking about non-defensive cross-kingdom communication is *Ophiocordyceps unilateralis*, colloquially called the zombie fungus. This parasitic fungus infects an ant and modifies the ant’s behavior to suit its own needs. While this may not be “communication” as we generally use the term, some kind of sophisticated information transfer is certainly taking place between these “mindless” organisms.

¹¹⁰ You may remember Kessler, Baldwin, and the coyote tobacco from Chapter 2, which cited a later study by the same researchers. The study under current discussion is Kessler, André and Ian T. Baldwin.

that came under attack from hawkmoth caterpillars, leaf bugs, and flea beetles, emitted a particular blend of VOCs (volatile organic compounds). This blend was found to attract Western big-eyed bugs (*Geocoris pallens*), a predator of all three of the attacking bugs. Kessler and Baldwin reported that by calling in this predator, the coyote tobacco plants were potentially able to reduce their attackers by more than 90%.

In addition to learning, recognizing kin, sharing, and communicating, plants are also known to sleep,¹¹¹ count,¹¹² and succumb to anesthesia.¹¹³ Though we do not have any satisfactorily precise definitions of consciousness or of mind, these abilities and behaviors suggest that many of the capacities we closely associate with mind are to some degree present within creatures that have none of the structures associated with brains or central nervous systems. Yet, to varying degrees and often indirectly (or non-consciously), plants are figured as passive, mindless, mechanistic things, often by the very researchers whose findings suggest otherwise.

Body

Intentionality,¹¹⁴ as a capacity that “properly belongs” to the human, continues to be a point of debate in response to these kinds of findings. We have long known that plants compete with each other, often fiercely, for nutrients and sunlight, but the idea that

“Defensive Function of Herbivore-Induced Plant Volatile Emissions in Nature.” *Science*, vol. 291, 16 Mar. 2001, pp. 2141-44.

¹¹¹ Coghlan, Andy. “Trees Seen Resting Branches while ‘Asleep’ for the First Time.” *New Scientist*, 18 May 2016.

¹¹² Böhm, Jennifer et al. “The Venus Flytrap *Dionaea muscipula* Counts Prey-Induced Action Potentials to Induce Sodium Uptake.” *Current Biology*, vol. 26, iss. 3, 8 Feb. 2016, pp. 286-95.

¹¹³ Yokawa, K. et al. “Anaesthetics Stop Diverse Plant Organ Movements, Affect Endocytic Vesicle Recycling and ROS Homeostasis, and Block Action Potentials in Venus Flytraps.” *Annals of Botany*, mcx155, 11 Dec. 2017.

¹¹⁴ I want to acknowledge that the term “intentionality” carries much conceptual baggage within literary theory and phenomenology; here, however, I’m taking up this particular term because it is most often the term of choice for botanists directly addressing certain questions in their field, not because I want to invoke authorial and phenomenological questions within ours.

they might cooperate with each other seems to strike many as a much more surprising behavior.¹¹⁵ Perhaps this is because we associate *human* strife, competition, and violence with our “baser nature,” conceiving our ability to cooperate as “overcoming” our low, animalistic impulse toward selfishness. This hierarchization of cooperation as higher or more noble—more *humanistic*—than selfishness is a value system that persists even as we come to recognize that our tendency toward cooperation and sociality is shared by our nearest evolutionary relatives, and therefore could more accurately be figured as a *product* of our animality rather than a conquering of it. Nevertheless, as we continue to consider them a “lower” life form, we find plant competition easier to swallow than plant cooperation.

Similarly, we tend to consider the reception of information to be further from the human end of the hierarchy than communication of information, particularly the deliberate, targeted communication of information—plants might listen, but they certainly don’t *tell*. In many cases, botanists overtly claim this distinction, as Baldwin, Kessler, and Halitschke do while defining “communication” in their research review of VOC findings: “Although ‘communication’ is a loaded term that means different things to different researchers, most would accept a definition with the minimal requirement that information be exchanged, regardless of ‘intent’ or fitness consequence of either party.”¹¹⁶ Here, the authors skirt the question of intentionality by raising it, ensuring their

¹¹⁵ For just one example, Tamir Klein, one of the researchers who published such findings, is quoted by Christina Selby: “The entire finding was a surprise, my co-author didn’t believe it at first, we thought it was a root sorting error [*sic*].” Selby, Christina. “Trees Share Carbon: New Discovery May be Key to Saving Trees in a Warming World.” *Mongabay.com*, 10 Aug. 2016.

¹¹⁶ Baldwin, Ian T., André Kessler, and Rayko Halitschke. “Volatile Signaling in Plant-Plant-Herbivore Interactions: What is Real?” *Current Opinion in Plant Biology*, vol. 5, iss. 4, 2002, pp. 351-4.

readers that they are not asking this particular question and simultaneously acknowledging that it's worth asking.

In many other cases, the dis-attribution of intentionality is accomplished via synonyms, scare-quotes, or grammar and vocabulary that otherwise distances plant subjects from as much volitional agency as possible. Virtually every botanist interviewed about the communicative, lethal acacia trees comment that just because an attacked acacia emits ethylene and other acacias respond to the ethylene by priming their defenses, that doesn't mean that the attacked acacia *wanted* to warn the others of greedy kudus; it's probably emitting ethylene to warn the other parts of its own body and the other acacias just overheard. Song et al. use the term “eavesdrop” to describe the use of mycorrhizal networks to transmit distress signals: “...plants can ‘eavesdrop’ on defence signals from the pathogen-challenged neighbors through CMNs [common mycorrhizal networks] to activate defences before being attacked themselves.”¹¹⁷ While the term “eavesdrop” does figure the listening plants' behavior as somewhat intentional or at least agentic, it elides any suggestion that the signaling plants are intentionally warning their neighbors. Similarly, we tend to attribute the communication between plants and beneficial predatory insects to the insect's ability to read the chemical emissions of the plant, rather than the plant's ability to send chemical messages to the insect. This is in keeping with our discussion in Chapter 2 of Jandér and Herre's avoidance of the active verb “punish” in favor of the passive noun “sanctions” when plants are the agent but not when animals are the agent. Language choices like those demonstrated here, taken together, establish a clear pattern of plants as mechanistic rather than intentional beings—they sense, and they

¹¹⁷ Song, Yuan Yuan et al. “Interplant Communication of Tomato Plants through Underground Common Mycorrhizal Networks.” *PLoS ONE*, vol. 5, iss. 10, 13 Oct. 2010.

react to those sensations, but they don't respond, decide, or intend to do any of the things they do.

Brain

This hesitancy to grant intentionality to plant behavior is exacerbated by science reporting that leans in the opposite direction, using intentionality as clickbait whether it makes sense to do so or not. To cite one example: in the *Scientific American* article “Mother Plants Tell Their Seeds When to Sprout: Parents Pass Down ‘Memories’ of Recent Temperatures to Prepare Seed for Incoming Spring Weather,”¹¹⁸ the study described found that plants that experience warmer temperatures produce seeds with weaker shells so that germination occurs earlier, while those that experienced colder temperatures produced seeds with tougher shells, delaying germination. These findings do not suggest anything like intentional communication (or “telling”) between the parent plant and the seedling, and while memory may be at work in the parent plant’s ability to remember recent temperatures and produce tougher or weaker shells accordingly, there is no indication in this study that those memories are “passed down” such that the seedlings also remember them, whether in the form of instinct or of knowledge. In other words, this study’s findings are that the parent plant determines the germination time of its seedlings, but does so mechanistically, by making it harder for the seedling to break through the shell. In this instance, it’s difficult to see what is being offered by “intentionalizing” this process, other than more fodder for the argument that anthropomorphizing plants is inherently inaccurate or misleading.

¹¹⁸ Lewin, Sarah. “Mother Plants Tell Their Seeds When to Sprout.” *Scientific American*, 1 May 2015. In Lewin’s defense, the article notes that the original title was “The Culture of Germination;” contra that defense, the new clickbait title and the accompanying tagline are adapted from the first few sentences of the article.

The Secret Life of Plants, published in 1973, is the quintessential figure of such disparaged anthropomorphism, almost certainly because of its wide influence on the popular imagination. Its title has gone viral, spawning variations such as *The Private Life of Plants*, *The Secret Life of Bees*, *The Secret Life of Trees*, and *The Hidden Life of Trees*,¹¹⁹ among many other book, article and blog post titles. Further, *The Secret Life of Plants* still frequently shows up in botany debates—flung as a disparagement of another’s work or held at arm’s length as a method of distancing oneself from anthropomorphic pseudoscience. A quick glance at the book will demonstrate why: if you make it through the flowery introduction, you arrive at a title page for Part I: Modern Research, followed by Chapter 1: Plants and ESP. That’s right; the section on “modern research” begins by making the case that plants can read human minds. The research it narrativizes is the work of Cleve Backster, a prominent figure in the history of the lie-detector test’s usage in interrogations. Backster’s experiments, which included using a polygraph galvanometer to ask a plant to identify a suspect after witnessing the murder of another plant, among other similarly outrageous tasks and findings, have not been replicated and have gone down as a notable pseudoscientific oddity. Though many well-respected plant researchers, such as Charles Darwin and George Washington Carver, are also cited elsewhere in the book, the authors frequently rely on the suspect authority of people like Backster, or on the personal spiritual reflections or even passing quasi-spiritual comments of rigorous scientists, much as Albert Einstein’s comment that “God does not play dice” is frequently used to lend Einstein’s scientific weight to creationism or predestination.

¹¹⁹ Respectively: a 1995 BBC documentary featuring David Attenborough, a 2001 novel by Sue Monk Kidd, a 2006 nonfiction book by science writer Colin Tudge, and a 2015 nonfiction book by German forester Peter Wohlleben.

As impossible as it is to take this book seriously, I must admit that I have some sympathy for the authors. Neither Peter Tompkins nor Christopher Bird is a scientist, and their goal is not to provide an overview of plant science; rather, the goal of this book is to convince its audience that plants “are living, breathing, communicating creatures,” not “automata”¹²⁰ as we so often perceive them, and that respecting them as such is necessary to save the planet from our own human destruction. To that end, they take up what they see as cutting-edge research, fringe science that might shake people out of their assumptions about plants. It’s easy to forget, too, that *The Secret Life of Plants* was published in the same decade that saw both Princeton and Stanford develop research programs and institutes for parapsychology,¹²¹ lending a degree of scientific rigor to questions about ESP, psychokinesis, and other now-absurd areas of study. Backster, who kicks off the book with his laughable claims that his philodendron could read his mind, was an interrogation specialist who founded the polygraph unit of the CIA. The polygraph itself, though no longer admissible in court, is still in use as an interrogation tool. It’s quite likely that the plant “witness” who supposedly identified its comrade’s murderer did in fact have a measurable response when that person entered the room: since the volunteer “murderer” was instructed to “stomp the plant to death,” it seems probable that he ended up carrying some of the VOCs that plants release when under predation and that the “witness” responded to those VOCs, since that’s, y’know, what they do.

¹²⁰ Tompkins, Peter and Christopher Bird. “Introduction,” *The Secret Life of Plants*, 2002, HarperCollins, p. xiv.

¹²¹ The Stanford Research Institute, established in 1972 and active until 1991, and the Princeton Engineering Anomalies Research Lab established in 1979 and active until 2007.

The point of all this is that it's easy to read this book ungenerously, and that doing so has produced an intense reaction on the part of most botanists to wildly flinch back from any suggestion that certain plant behaviors—especially communication—might be intentional. Even those who are more willing to consider this possibility are careful to distance themselves from *The Secret Life of Plants*, or anything that smells similar. My own impulse was to do the same, to recoil from any association with a work that apparently takes auras and clairvoyance seriously.

However, the very project that I'm currently engaged in requires that I reconsider. Instead, I must acknowledge the affinities that my work shares with Tompkins and Bird's: like them, I am interested in the ways that non-canonical science can challenge long-held assumptions, the ways that non-scientific knowledges can shed different light on scientific endeavors, and the ways that a close examination of plants and plant behaviors can radically shift the kinds of questions we ask about the world and our relationship with it. Affinity is never totalizing, though, just as difference is never totalizing. Though others will have to judge my success, I have attempted to be more discerning than Tompkins and Bird in my choices about which scientific works to take up, balancing methodological rigor with provocative findings and conclusions. I have focused on the contributions that can be made by bringing rhetorical knowledge to scientific questions and concerns, as well as to the published science itself, while Tompkins and Bird attempted to do something similar with various kinds of "spiritual knowledge" or mysticism. They seek to use plants to shift our assumptions and questions toward a humility or even worship that they believe will improve human-other relationships, while I—well, I suppose I'm leaving out the humility and worship.

Minded Response, Mechanized Reaction

These last few paragraphs have been an attempt to distinguish between my *reaction* to *The Secret Life of Plants* and my *response* to it; or, rather, to set aside my reaction and deliberately, consciously, mindfully develop a response. Within rhetoric, especially twentieth-century rhetorical theory, the weight of these two terms and the distinction between them cannot be overstated. As teachers of rhetoric, we champion deliberate, considered, crafted response; while we may study “impulsive” reaction, we teach reaction as something to be avoided, or at most as raw material that is then to be crafted. Outside of pedagogy, the distinction is at the heart of the notion of civil discourse: we must thoughtfully respond to other citizens; to be “reactionary” is to fall short of the democratic ideal.

It is at the heart of Kenneth Burke’s distinction between action and motion,¹²² in which action is associated with symbolic systems (defined exclusively as human) and motion is associated with the nonsymbolic—all that falls into the realm of material, including the “intuitive signaling systems”¹²³ of other animals like bees. Humans have action, while everything else has only motion. Or to put it another way: humans can respond, while everything else can only react. More recently, Derrida’s *The Animal That Therefore I Am*, which this dissertation owes so much to, is essentially 160 pages that ask (and never answer) “whether one can know what *respond* means. And how to distinguish between a response and a reaction.”¹²⁴ Following Derrida, Diane Davis’s *Inessential*

¹²² Burke, Kenneth. “(Nonsymbolic) Motion/(Symbolic) Action.” *Critical Inquiry*, vol. 4, no. 4, 1978, pp. 809-38.

¹²³ *Ibid.*, p. 810.

¹²⁴ Derrida, Jacques. *The Animal That Therefore I Am*. Edited by Marie-Luise Mallet, translated by David Wills, Fordham UP, 2008, p. 8. Original emphasis.

*Solidarity*¹²⁵ introduces us to prior rhetoricity, a concept founded not on symbolic communication but on “a more fundamental affectability, persuadability, *responsivity*.”¹²⁶ The coda of the book, in which Davis begins what will turn out to be a years-long interest in animals, cites Derrida’s troubling of the response/reaction distinction. This troubling reflects back on all the previous chapters, resituating the centrality of “response-ability” (though without, as Davis puts it, “sink[ing] the ship” of her project).¹²⁷ She calls for rhetorical scholars to “begin to question this distinction, this taken-for-granted border between the authentic response and the mere reaction.”¹²⁸

To all this, I merely want to add a few insights. First, that rhetorical attention to plants requires us to more consistently include “mind/mechanism” within the constellation of response/reaction, action/motion, choice/drive, reason/instinct, and so on. Plant behavior is often not even granted so animate a descriptor as “reaction,” yet the logic of the clean distinction between responding and reacting is nevertheless at work every time plants are figured as mechanistic organisms. Second, current brain research indicates that “response” is more “mechanistically” produced than previously thought,¹²⁹ such that carrying the question of mechanistic organisms from the realm of plants into the realm of humans requires us to reconfigure what we might mean by “mechanistic organism” in the first place, a reconfiguration that is potentially transformative of our

¹²⁵ Davis, Diane. *Inessential Solidarity: Rhetoric and Foreigner Relations*. U of Pittsburgh P, 2010.

¹²⁶ *Ibid.*, p. 2. My emphasis.

¹²⁷ *Ibid.*, p. 165.

¹²⁸ *Ibid.*

¹²⁹ For some interesting examples, see Soon, C.S., M. Brass, H.J. Heinze, and J.D. Haynes. “Unconscious Determinants of Free Decisions in the Human Brain.” *Nature Neuroscience*, vol. 11, iss. 5, 2008, pp. 543-5; Fried, Itzhak, Roy Mukamel, and Gabriel Kreiman. “Internally Generated Preactivation of Single Neurons in Human Medial Frontal Cortex Predicts Volition.” *Neuron*, vol. 69, iss. 3, 2011, pp. 548-62; Morsella, Ezequiel, Christine A. Godwin, Tiffany K. Jantz, and Stephen C. Krieger. “Passive Frame Theory: A New Synthesis.” *Behavioral and Brain Sciences*, vol. 39, 2016.

ethical relationship with plants if in turn we carry the question back into their realm once more. In other words, plants may very well be mechanistic beings, but this carries very different meaning when we recognize that we ourselves are mechanistic beings—my brain makes decisions before my mind is aware of them, even if it feels like my mind is in charge. What we might learn from these two insights together is that the distinction between a response and a reaction is that *(minded) response is a type or subset of (mechanistic) reaction*. Distinguishing between the two makes sense for describing a particular utterance or behavior even as the distinction is shown to be utterly meaningless as a binary method of classifying living things; that is, separating living things into categories of “responsive” and “reactive” no longer holds water.

Finally, I want to pose—not a question, but the *possibility* of a question about the prevalence of mechanism in contemporary thought. While ruminating on Diane Davis’s thinking about Derrida’s thinking about Levinas’s thinking about response, I suddenly remembered a story that my undergraduate computers instructor told us one day. Why? I can’t be certain why. Suffice it to say that this is merely how my brain reacted to the situation it was in. The story is this: in the early days of computing, people who were not computer experts frequently asked the computer experts if they could get correct information or “right answers” out of the computer even if they made a mistake when entering data into it. Apparently, this type of question was common enough to give rise to the axiom “garbage in, garbage out,” which is shorthand for the idea that your input must be accurate in order for the output to be accurate. The Wikipedia page for the phrase “garbage in, garbage out” confirms both the story itself and my memory of it,

adding that Charles Babbage said he could not “apprehend the kind of confusion of ideas that could provoke such a question.”

I want to articulate the line of thinking that followed as a provocation for some technologically-minded rhetoric scholar to take up, as it raises a set of questions that suggests a book unto itself. In short, I started to wonder what kind of thinking *would* cause someone to ask whether the desired response could be gotten from a computer even if the computer was given wrong information. After all, a computer is a mechanism; it cannot “figure out” what you might actually want and account for your errors. The only things that can sometimes do that are living things; not only people, but also some animals can occasionally read my intentions even when my words are “in error.”

Which led me to the question: Is it possible that what Mr. Babbage thought of as a “confusion of ideas” was instead the application of an organic, rather than a mechanistic, logic to a machine so complex that, to the observers, it seemed possible that it might behave as if it were alive? Is our tendency to think of nonhumans as mechanistic beings something that we recently *learned*? While we can of course trace the idea that animals are entirely or primarily automata back to at least Descartes, and the same idea for plants can be traced even further back to at least Theophrastus, the widespread, default tendency to think of all nonhuman living creatures as more mechanistic than minded seems to be more concentrated in the twentieth-century than elsewhere in human history. Perhaps what seems like a monolithic binary in human thought about nonhumans is instead a fairly recent swerve. Perhaps animal rhetoric could benefit from a history of the mechanization of creatures. Though such a history is outside the scope of this dissertation, it has the potential to shed an entirely different light on both the present

chapter as well as the next, in which we take up the question of whether plants share one of the most basic creaturely affinities.

Chapter 4: Pain and Ethics

The question is not, Can they *reason*? nor, Can they *talk*? but, Can they *suffer*?

—Jeremy Bentham, *An Introduction to the Principles
of Morals and Legislation*

The youth said, “I’ll break you, / Little rose on the heath.”

/ Little rose spoke: “I’ll prick you, / So that you’ll forever think of me,
/ And I don’t want to suffer it.”

—Goethe, “Heath Rose”

O if those fields could speak /

Surely they’d stay silent

—Sam Sax, “Seasonal Affective Disorder”

Into the Swerve

Like us, plants die, and like us, they struggle to avoid it. The exact nature of their struggles, however, is often thought of as being radically different from our own, such that we share nothing in common with them other than the drive to continue living. In many ways this is the case, as most plants don’t have the same basic needs as me—food, shelter, exercise, a bar within walking distance, and so on. However, recent botanical research suggests that, just as with animals, our assumptions about what capacities plants do and do not have are in dire need of an update. It has been my contention in this dissertation that seeking affinity with plants and being willing to consider that some human “properties” might also “belong” to them has the potential to reconfigure our

concept of the human as well as our concept of botanicity. In the spirit of pushing the boundary as far as it might go, the capacity under investigation in this chapter is not consciousness (plant consciousness has already been posited by some), nor speech (plant communication has long been considered in one way or another). Instead, the capacity under investigation here is *pain*. Of all the capacities that we resist ascribing to plants, in my experience, pain is at the apex.

Everyone knows that plants do not feel pain; in fact, any suggestion that they do qualifies as the most egregious anthropomorphism. I would like to make exactly that claim—or rather, I would like to follow in the spirit of Michelle Ballif’s adoption of a “certain...uncertainty regarding the border between the living and the dead”¹³⁰ by positing an uncertainty about the border between the algesic and the analgesic—both of which are borders that, for most people most of the time, could not be more clearly defined. The resistance to plant pain is so strong, however, that in order to arrive at uncertainty, I will here attempt to argue that they do feel pain—a kind of *dissoi logoi* of a knowledge so common that we usually don’t bother to articulate it: that is, the “knowledge” that plants can’t hurt. I will not be calling for the founding of a Society for the Prevention of Cruelty to Plants, as botanist Francis Hallé cheekily suggests;¹³¹ rather, this chapter ultimately seeks to trouble the ease with which we write half the creatures on earth out of one of the most influential questions in creaturely ethics: can they suffer?

As previous chapters have indicated, there are many capacities that we resist attributing to plants, including agency, awareness, and sensation. Resistance to the

¹³⁰ Ballif, Michelle. “Zombies / Writing: Awaiting Our Posthumous, Monstrous (Be)Coming.” *Writing Posthumanism, Posthuman Writing*, edited by Sidney I. Dobrin, Parlor Press, 2015, pp. 79-98. P. 81.

¹³¹ Hallé, Francis. *In Praise of Plants*. Translated by David Lee, Timber Press, 2002, p. 24.

notion of plant pain is even greater; however, our current understanding of plant behavior in response to both actual and potential bodily damage asks us to consider such a possibility. Further, doing so has the potential to reconfigure our ethical relationships with human and nonhuman others. When I use the term “ethics,” I refer less to any particular branch or subset of ethical study, and more to the fundamental ethicality of encountering otherness; within this definition, there is no action (including inaction) that can be “unethical.” Others and otherness are always being encountered, are always affected, even by apathy or lack of awareness. Frequently, our engagement with plants takes just this form of ethical inattention. As we will see, though, when plants do come to our attention, acknowledging them as worthy of care or consideration meets startling resistance.

The resistance to bringing plants into the discussion of ethics can sometimes come across as outright vitriol, particularly within the realm of animal rights or welfare. Jeffrey Nealon puzzles over this tendency in the preface to *Plant Theory: Biopower & Vegetable Life*,¹³² pointing specifically toward Cary Wolfe and Gary Francione. Both thinkers are annoyed at what they see as the diminishing of their work on animal rights by those who, as Francione puts it, “claim that we should skip over the interests of the cow and worry about whether the carrot had a tough harvesting season.”¹³³ As Nealon notes, this is an understandable reaction to the “vegetarian-baiting” that sometimes crops up in pop culture and mass media. Although we might not condone it, we can probably understand the impulse to deride that which makes their own work seem absurd by association.

¹³² Nealon, Jeffrey T. *Plant Theory: Biopower & Vegetable Life*. Stanford UP, 2016.

¹³³ *Ibid.*, p. xi.

However, to completely dismiss plants as undeserving of any ethical attention “seems to function as a subset of an old practice: trying to close the barn door of ethical consideration right after your chosen group has gotten out.”¹³⁴ If this hostility were one side of a coin and acceptance were the other, then perhaps we could chalk it up to a champion-your-own-cause mentality and ignore it. The problem is that the other side of the coin is not the acceptance of plants as deserving of ethical consideration, but the omission of plants from the discussion entirely, what (as mentioned above) Nealon describes within Derrida’s work as “a pattern of dedicated swerves around the question of vegetable life.”¹³⁵ Interestingly, though, Nealon makes his own swerve later on in *Plant Theory*—not around plants themselves, of course, but around plant pain. In setting up the exigence for “Chapter 2: Thinking Plants with Aristotle and Heidegger,” Nealon lists several ways in which “[r]esearch into ‘plant intelligence’...has complicated or flat-out refuted almost all of [the] traditional picture of plant life.”¹³⁶ Within this list, which is provided in a parenthetical aside, Nealon mentions plant pain only to immediately qualify it within the same sentence: “there is even research to suggest that plants feel pain, or at least respond decisively to extreme danger.”

The fact that Nealon includes the mention of plant pain suggests that, on some level, Nealon recognizes it as a question worth asking—even if, on another level, he also recognizes that the very suggestion comes across as absurd. Even if this textual moment is tiny, brief, parenthetical, and seemingly unimportant, it is nevertheless telling about the difficulties of the question. Nealon, like most of us who take up the theorization of

¹³⁴ *Ibid.*, p. xii.

¹³⁵ *Ibid.*, pp. x-xi.

¹³⁶ *Ibid.*, p. 30.

plants, is much more comfortable granting decision-making to plants—see his qualifier that they “*at least respond decisively* to extreme danger”—than granting the sensation of pain, even though decisiveness (or intent, or consciousness, or will) is fully associated with brains and therefore could be viewed as the bolder claim to make with regard to plants. In other words, plants are “all body” and “no brain,” so one would think that we’d be more willing to grant them pain than to grant them decisiveness. Part of the reason for this hesitation or swerve, whether dedicated or undedicated, around plant pain—of which Nealon is but one example—might lie in the ethical questions that must be faced if tissue damage produces similar painful feelings in plants as such damage produces in humans and other animals.

Wounding

That plants have bodily responses to actual tissue damage is not in question. They heal themselves of damage caused by herbivory, breakage, cuts, and abrasions. What is often not recognized is that plants also avoid potential tissue damage, according to their abilities. As Francis Hallé (among others) has pointed out, a sessile lifestyle results in the evolution of a biochemical avoidance system “as a substitute for being able to flee.”¹³⁷ For someone who cannot run away from harm, the only option is to convince the harmer to run away. For this reason, plants have developed chemical arsenals to deter predators—we can see everyday evidence of this not only in fatal plants, but also in plants like poison ivy that produce nonfatal irritants. Even the disagreeable flavor of an unripe fruit is a biochemical function that helps prevent unwanted consumption.¹³⁸

So far, these examples of defense against damage do not, on their own, indicate

¹³⁷ Hallé, p. 156.

¹³⁸ Consumption is, of course, not always unwanted in the botanical world.

that a plant can feel a particular instance of damage being done to it, since they are preventative measures that do not depend on sensation for their deployment. For evidence of this, we must consider the ways that plants sense and respond to actual, rather than potential, wound infliction. Researchers José León, Enrique Rojo, and José J. Sánchez-Serrano have detailed the signaling pathways activated in plants upon receiving a wound.¹³⁹ They found that an injury or wound is perceived by local cells, which then transmit signals throughout the body of the plant that activate both a localized healing response and a systemic deterrent response. This systemic deterrent usually takes the form of an increase in the production of a chemical, like tannin, that deters insects or larger animals from eating the plant. When plants sense an injury, they take action to repair the damage but also to distance themselves from the threat by driving it away, thereby avoiding further injury.

There is also evidence that plants not only deploy general deterrence of injury (like the aforementioned poison ivy), and they not only respond to an injury after receiving it, but that they also use other senses to predict and prepare a targeted deterrence of an imminent injury before it actually happens. For instance, botanists H.M. Appel and R.B. Cocroft found that *Arabidopsis thaliana*, or thale cress, can distinguish the sound of caterpillars feeding from other environmental sounds, and that the plants prime their defense systems whenever they hear such sounds, even in the absence of related sensory stimuli such as the weight of the caterpillar on their leaves.¹⁴⁰ This suggests that an individual thale cress can hear its neighbors being injured and take action

¹³⁹ León, José, Enrique Rojo, and José J. Sánchez-Serrano. "Wound Signalling in Plants." *Journal of Experimental Botany*, vol. 52, iss. 354, 2001, pp. 1-9.

¹⁴⁰ Appel, H.M. and R.B Cocroft. "Plants Respond to Leaf Vibrations Caused by Insect Herbivore Chewing." *Oecologia* vol. 175, iss. 4, 2014, pp. 1257-66.

to avoid becoming a victim itself. Some plants, like the acacia tree, take this a step further and actively warn their neighbors of the imminent danger.¹⁴¹ When eaten by herbivores, an acacia tree produces tannin as a toxic deterrent to the animals. Simultaneously, the tree releases ethylene into the air. Neighboring acacia trees that have not yet been approached by an herbivore will begin producing their own tannin defense upon sensing this ethylene warning signal. Wouter Van Hoven discovered this phenomenon in 1990 while investigating the deaths of unusually large numbers of kudu antelope in South Africa. These antelope were unable to engage in their normal browsing patterns due to fencing in the area, and were therefore forced to continue browsing the same acacia trees over and over. The tannin produced by the trees eventually reached lethal levels, killing around 3,000 of the kudu. The acacia will only put up with so much injury by herbivores before they defend themselves with deadly force.

The coyote tobacco plant has a different, but equally extreme, method of dealing with unacceptable levels of damage. Coyote tobacco plants usually rely on hawkmoths for pollination, attracting these insects in particular by opening at night and emitting benzyl acetone, and rewarding them by producing nectar that is high in sugar. In addition to feeding on the nectar, the hawkmoths in turn exploit the tobacco plants by laying their eggs on them so that the plants' leaves offer a food source for hawkmoth caterpillars. Although such herbivory is detrimental to the tobacco, the benefits of specializing in attracting hawkmoths seems to mitigate the risk—most of the time, anyway. Researchers Danny Kessler, Celia Diezel, and Ian T. Baldwin found that when hawkmoth caterpillar

¹⁴¹ Some will claim that the acacia tree does not intend to warn its neighbors, but only to warn the other leaves on its own body, drawing the conclusion that the original acacia is not actively communicating with its fellow acacias. See the Chapter 3 discussion of “eavesdropping” v. “telling.”

predation reaches infestation levels, coyote tobacco plants begin producing new, different kinds of flowers.¹⁴² These new flowers open in the morning rather than at night, have lower sugar content, are shaped more narrowly, and do not emit benzyl acetone. These flowers no longer attract hawkmoths (and may in fact deter them, due to the narrower shape of the flower); instead, they attract black-chinned hummingbirds. Although the tendency can be traced as having developed because of evolutionary pressures, the behavior itself is not an evolutionary change, over the course of generations, but a behavioral adaptation of individual plants. That is, an individual coyote tobacco will fully switch between these two very different kinds of flowers within a single season. A coyote tobacco plant gets fed up if its lover becomes too selfish and dumps them for somebody less toxic (although, like many humans, it often can't resist going back).

Resistance

Throughout the previous section, I have referred to “injury” and “damage” but not to “pain.” It’s time now to consider whether the ways that plants respond to actual or potential tissue damage indicate that we should assume that their sensory experiences are analogous to our own. They have evolved mechanisms to prevent or mitigate certain kinds of injury. On a cellular level, their bodies recognize when their tissue has been damaged and take action to heal it. On a systemic level, they defend themselves against direct injury, they prepare themselves for imminent injury based on their perceptions of their immediate surroundings, and they warn their neighbors that something wants to hurt them. Plants have a sensory experience of tissue damage, and seek to avoid it in the various and often complex ways that their capacities allow. This is as much knowledge

¹⁴² Kessler, Danny, Celia Diezel, and Ian T. Baldwin. “Changing Pollinators as a Means of Escaping Herbivores.” *Current Biology* no. 20, 2010, pp. 237-42.

as we feel we need in order to assume that animals are capable of feeling pain; while we can find our sensory receptors for pain, called nociceptors, in other animals, we cannot be certain that the sensory experience is the same for them as it is for us. Similarities in behavior, not physiology, is the basis for our acceptance of the idea that many animals experience pain like we do. If we account for different material, bodily realities, plant behavior in response to both actual damage and imminent damage suggests that we should consider whether plants can feel pain or something like it. Instead, we sometimes allow our “knowledge” that plants can’t feel pain lead us to forget what we already know about their material bodily realities.

For instance, Daniel Chamovitz writes in his widely popular book *What a Plant Knows* that “while plants feel touch, they don’t feel pain,”¹⁴³ and he apparently bases this claim on the fact that plants don’t move away from damaging stimuli. Chamovitz makes this claim while discussing a study conducted by Dianna Bowles. Bowles was investigating whether a tomato plant uses a chemical signal or an electrical signal to communicate an injury to other parts of its own body, and the stimulus she used to produce the signal was a piece of hot metal held against one of the leaves. Describing this study, Chamovitz insists that “the leaf did not feel pain. The tomato responded to the hot metal not by moving away from it but by warning its other leaves of a potentially dangerous environment.”¹⁴⁴ In other words, the tomato plant’s response to the hot metal against one of its leaves was to send a signal from the damaged leaf out to the rest of the plant’s body, which then caused the rest of the plant to engage its insect deterrent chemical response. It’s interesting to note that Chamovitz is willing to overlook the fact

¹⁴³ Chamovitz, Daniel. *What a Plant Knows: A Field Guide to the Senses*. Scientific American, 2012, p. 66.

¹⁴⁴ *Ibid.*, p. 68.

that a piece of hot metal against one leaf is a very different kind of dangerous experience than the kinds that plants have evolved to deal with, since recognizing this would help explain why the tomato plant in the study responded to hot metal by increasing its insect defense chemicals. Hot metal does not resemble insect herbivory as a sensory experience, as far as we can tell.

In fact, it doesn't really resemble any of the dangerous situations that a tomato plant might find itself in during the normal course of its life. The tomato has no defenses against hot metal, since it almost never encounters such a danger; however, it does recognize the hot metal *as* a danger and subsequently deploys the defense that it does have. In humans and animals, one of the functions that pain serves is to keep us safe from new and unfamiliar dangers. We instinctively avoid certain dangers, like animal bites, but we must learn about other ones, like touching a hot stove. The pain produced by the hot stove causes us to react to it in the same way we react to an animal bite: we flinch and move away, and very young humans might even try to hit the stove. The commonality between these two sensory experiences is that they both hurt. It seems likely that there is also some commonality between the feeling a plant has when insects eat it and the feeling it has when a piece of hot metal is held against one of its leaves, or else the plant would not respond to both sensations in the same way. It doesn't seem unreasonable to posit that "pain" is an appropriate term for the commonality between the familiar feeling of being eaten and the unfamiliar one of being burned, regardless of whether we're talking about tomatoes or toddlers.

Instead of wondering whether the tomato plant felt pain, or why it reacted to the metal the way it did, Chamovitz has already decided that this is a capacity the plant

doesn't have; further, he bases this assumption on the tomato's inability to perform another action that it is incapable of performing. His criteria for whether or not a being has the capacity to feel pain is whether it "moves away from" the source of the pain. This kind of logic is akin to arguing that a dog must not feel pain, since he doesn't say, "It hurts." The dog *can't* say "it hurts," but he can yelp, and most of us recognize that these responses are similar enough to safely assume that the sensory feelings prompting each of them are also quite similar. In the same way, a plant can't move away from a source of pain, but it does have some specialized resources to try to make the source of the pain move away from it, and it reacts this way even toward an unfamiliar danger. Given the plant's sessile mode of existence, this seems similar enough to consider it in the same category as a yelp or a flinch. For Chamovitz, though, the certainty that plant pain does not exist overrides his knowledge of the plant's materiality and produces this "dedicated swerve" around the entire question. Though of course, you can't swerve around something unless you recognize that it's there in first place; in this sense, the fact that Chamovitz mentions plant pain at all, even to dismiss the possibility, is a greater recognition of the possibility than most of us have achieved.

Chamovitz's dedicated swerve may have something to do with his professional relationship with plants. He is a geneticist specializing in plant research, focusing in particular on cancer treatment and food security. In other words, the goals of his research are primarily oriented toward the use value of plants for humans. This is not intended as a criticism, as the worthiness of both cancer research and food security research are pretty self-evident. However, an orientation toward other beings as primarily valuable for the uses to which we can put them has historically produced questionable ethical

relationships, even within schools of thought that are known for their considerations of ethics. For instance, Matthew Hall locates the distinction between Jainism's inclusionary plant ethics and Buddhism's exclusionary plant ethics in a foundational concern for their use value.¹⁴⁵ While acknowledging that there are many different Buddhisms, Hall notes that in some early Buddhist texts there is "a subtle, yet deliberate backgrounding of the plant kingdom in connection with human use."¹⁴⁶ He cites leading Buddhist scholar Lambert Schmithausen's description of these texts as attempting to "deliberately avoid arousing in lay people qualms in connection with a moderate utilization of plants for food and other basic needs."¹⁴⁷ Over time, the conflict that produced such "qualms" was solved by explicitly defining plants as non-sentient, meaning that plants were placed "outside the realm of moral consideration" as well as excluding them from "that group of beings who are the appropriate recipients of virtuous actions."¹⁴⁸

For Hall, this solution to the problem of reconciling nonviolence with the necessity of eating is an inconsistency within Buddhist ethical philosophy that is made possible by an approach that begins by establishing difference. He contrasts this with Jainism, which was able to reconcile a nonviolent doctrine with violent bodily necessity without denying plants a seat at the sentence table due to its tenet of "seeking out *affinity* with other beings in the face of clear and obvious alterity."¹⁴⁹ This particular approach toward ethics, the seeking out of affinity as the first and fundamental step of engagement, results in an orientation toward plants that does not privilege their use value above all

¹⁴⁵ Hall, Matthew. *Plants as Persons: A Philosophical Botany*. State U of New York P, 2011.

¹⁴⁶ *Ibid.*, p. 89.

¹⁴⁷ *Ibid.*

¹⁴⁸ *Ibid.*, p. 90.

¹⁴⁹ *Ibid.*, p. 81.

else, since “concentrating solely on the instrumental value of plants would be a denial of their affinity with humans as equally valid locations of being.”¹⁵⁰ This contrasts sharply with the Buddhist method of “constructing and emphasizing discontinuity” and a “drive toward disconnection”¹⁵¹ that not only makes possible exclusion as a way of resolving the conflict between eating and nonviolence, but that encourages a conceptual understanding of plants that is rooted almost solely in their use value to humans and other animals, which in turn underwrites and justifies an absence of consideration for an ethical relationship between humans and plants. While Jainism begins with a search for affinity, its philosophy is not inattentive to difference; rather, difference does not serve as the basis for conceptualization that renders an ethics unnecessary. The practical ethics based on affinity that has developed within Jainism recognizes that pure nonviolence is an impossibility that should be strived for nonetheless. Rather than claiming that eating plants is not “killing,” Jain ethics explicitly acknowledges that it is in fact killing, and should therefore be done with the utmost consideration of what is necessary. Given all this, it is perhaps unsurprising that Jainism and Buddhism also differ in that Jain philosophy considers plants to be capable of suffering, while Buddhist philosophy explicitly denies them this capacity.

Indefinability

Proposing that plants might feel pain is not actually as radical as it might sound, as there is a history of debate over the pain-experiencing capacities of all kinds of creatures. Invertebrates, fish, monkeys, the entire nonhuman animal kingdom, and even human babies as well as certain human “races” have been defined as lacking the ability to

¹⁵⁰ *Ibid.*, p. 86.

¹⁵¹ *Ibid.*, p. 90.

experience pain at some point in the history of Western science.¹⁵² Even the pain experienced by speaking humans—who are capable of at least attempting to articulate such experiences—is notoriously difficult to define, as attested by the definition provided by the International Association for the Study of Pain: “an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage.”¹⁵³ The extensive note accompanying this definition explains that pain is “always unpleasant and therefore also an emotional experience” in addition to being a physical one. Defining pain as “associated with” rather than “caused by” tissue damage is an attempt to prevent assessors from dismissing a patient’s pain simply because no injury can be identified, and specifying that the associated tissue damage can be either actual or potential addresses the possibility that the pain is experienced before any tissue damage is perceptible. The final part of the definition, “or described in terms of such damage,” functions to include phantom pain (as with amputated limbs), psychosomatic pain, or any other kind of pain that seemingly has no cause—if someone says “it feels like I’m being stabbed in the ribs,” the IASP recommends that the patient’s pain be treated as real, even if no cause is evident. The IASP’s definition attempts to take into account the various difficulties that sufferers have historically had in convincing others to believe their pain is real.

Elaine Scarry addresses this tendency toward disbelief early in her book on torture, *The Body in Pain*:

For the person whose pain it is, it is “effortlessly” grasped (that is, even with the

¹⁵² Ferdowsian, Hope and Debra Merskin. “Parallels in Sources of Trauma, Pain, Distress, and Suffering in Humans and Nonhuman Animals.” *Journal of Trauma and Dissociation*, no. 13, 2012, pp. 448-68.

¹⁵³ “IASP Taxonomy: Pain.” International Association for the Study of Pain, 2014. www.iasp-pain.org/Taxonomy#Pain.

most heroic effort it cannot *not* be grasped); while for the person outside the sufferer's body, what is "effortless" is *not* grasping it (it is easy to remain wholly unaware of its existence; even with effort, one may remain in doubt about its existence or may retain the astonishing freedom of denying its existence; and, finally, if with the best effort of sustained attention one successfully apprehends it, the aversiveness of the "it" one apprehends will only be a shadowy fraction of the actual "it"). . . . Thus pain comes unsharably into our midst as at once that which cannot be denied and that which cannot be confirmed.¹⁵⁴

All of which is to say that we can never truly know another's experience of pain. However, the same could be said of another's experience of hunger, or of any experience at all. Scarry identifies another quality of pain that sets it apart from hunger and other similar experiences: pain not only "resist[s] language but actively destroys it, bringing about an immediate reversion to a state anterior to language, to the sounds and cries a human being makes before language is learned."¹⁵⁵ For Scarry, pain's very resistance to verbalization is one reason why it is so urgent that we attempt to verbalize it, to externalize it and make it visible.¹⁵⁶

But what of the sufferer who cannot verbalize their pain, or perhaps anything at all? The IASP addresses this possibility, albeit in reference to human pain only, in the note accompanying the definition referenced above, stating unequivocally that "the inability to communicate verbally does not negate the possibility that an individual is experiencing pain and is in need of appropriate pain-relieving treatment." Although the

¹⁵⁴ Scarry, Elaine. *The Body in Pain: The Making and Unmaking of the World*. Oxford UP, 1985, p. 4.

¹⁵⁵ *Ibid.*, p. 4.

¹⁵⁶ *Ibid.*, p. 11.

IASP is defining pain for the purpose of treating specifically human patients, we can turn their approach toward nonhumans by taking up the spirit of their definition, which is to encourage us to err on the side of belief rather than disbelief. For those who study the treatment of pain, the ethical consequences of dismissing real pain are far too great to risk those consequences simply for the sake of being “right” about its absence. The IASP asks us to assume that pain really exists unless proven otherwise, and when the sufferer cannot articulate that pain, we must orient ourselves in such a way that “believing” their bodily responses is our default approach. The difficulty of defining pain and verifying whether another being of any kind feels it, combined with the magnitude of the ethical consequences of defining another being as existing outside the possibility of painful experience, should make us very slow to claim certainty about such categorizations.

S. Scott Graham’s *The Politics of Pain Medicine* charts a history of ontologies of human pain that may oil the hinges of the door I am propping open here. Tracing the multiplicity of conceptualizations of pain from Hippocrates forward, and acknowledging the historical difficulties of defining exactly what pain is, Graham arrives at contemporary “hybrid” models of pain that “argue that pain is a phenomenon or collection of phenomena that defy the mind/body binary.”¹⁵⁷ This way of thinking pain does not rest upon the ability to determine whether a yelp is “merely” an indication of a mechanistic reaction to damage or is an indication of true “experience” of pain sensation, since the distinction between these two interpretations makes no sense except from within the logic of the mind/body binary.

We might question whether contemporary models of pain have actually gotten

¹⁵⁷ Graham, S. Scott. “An Ontological History of Pain.” *The Politics of Pain Medicine: A Rhetorical-Ontological Inquiry*. U of Chicago P, 2015, p. 65.

outside mind/body dualism; to say that pain is “sensory and emotional”¹⁵⁸ or that it is “always mental *and* physical”¹⁵⁹ is to maintain that the mental and the physical exist as two distinct concepts. However, the desire to collapse, bridge, hybridize, or otherwise trouble the mind/body binary with regard to pain suggests that an adequate definition of pain cannot be based on an ontology that simply equates body with mechanistic reaction and mind with true experience. This matters because botanic response to tissue damage (and remember, tissue damage is the central figure within the IASP’s definition of pain in a human medical context) has primarily been thought of as a mere mechanistic reaction which does not indicate a sensory experience of pain. The thale cress, the coyote tobacco, Chamovitz’s tomato, and all the other plants we both have and haven’t examined here, together suggest that it is no longer sufficient to accept a knee-jerk (that is, mechanistic) dismissal of plants as non-suffering creatures. Graham’s hybrid models of pain, which push back against the mind/body binary in humans, paired with Chapter 3’s argument that our concept of mind itself is troubled by plants, open a route to thinking about plants as capable of experiencing pain as well as the host of questions about our ethical relationship with them that must be asked if plant pain is indeed possible.

(Re)Orientation

It does not solve our problem, though, to simply import our human relationship to pain into the realm of plants. Perhaps one reason that we remain so reluctant to consider plant pain is due to the fact that such a possibility forces us to recognize that there are no simple solutions to our historically problematic ethical relationships with nonhumans. In

¹⁵⁸ “IASP.”

¹⁵⁹ Graham, p. 65.

other words: at least on a personal level, there is a very simple solution to the unacceptable practices that make themselves known when we begin to pay attention to, for example, the American meat industry: we can stop eating animals. This may not be easy for everyone to put into practice, but as a decision, it is a simple one: no more animals, period. We cannot make the same simple decision as a response to the ethical concerns raised by writing plants into the realm of pain, since we cannot survive on salt and water. The question of how we should ethically engage plants requires us to ask questions before we leap to provide answers, and they cannot be the same questions that have been raised when we have taken the time to ask how we might consume animals responsibly, since plants have a different relationship to pain and consumption than animals do.

Due to their sessile lifestyle, plants have developed an orientation toward harm that is not based in pure avoidance. The previously mentioned examples of the acacia tree and especially the coyote tobacco demonstrate that plants are willing to accept a certain amount of predation when it suits their interests. Most commonly, the interests that take precedence over the threat of harm are reproductive interests, as we also see in the animal kingdom when animals fight over mates, when mating behavior itself is painful or deadly, and when offspring are threatened. Most plants rely on animals for pollination, which has resulted in a sort of exchange of benefits—the coyote tobacco prefers hawkmoths as its pollinator, so it accepts some predation by hawkmoth caterpillars. If the damage, or the pain, becomes too great then the plant will shun its preferred pollinator and go with its second option.

Since plants are physically at the mercy of their mobile collaborators, they must

find ways to persuade those collaborators to behave in a way that serves the plants' interest. The sole function of nectar seems to be to attract certain pollinators toward very particular areas of the plant's body to ensure pollination. Nectar does not seem to serve any function for the plant other than persuading animals to perform particular, often very specific behaviors. Offering nectar, however, only costs the plant energy, while offering fruit costs energy and *asks an animal to consume a body part*. I have been unable to find an analogous example within the animal kingdom. While many animals, like lizards and starfish, can regrow limbs as a method of dealing with the *possibility* that their body parts may be eaten, and some parasites want to be swallowed *whole* in order to live in the gut of another animal, plants seem to be the only living things that grow a body part whose sole purpose is to seduce another living thing to take a bite. A common misconception is that a fruit functions like an egg, providing nourishment for the seed to begin growing and suggesting that the fruit provides a direct service to the offspring of the plant. Although the decaying flesh of a fruit can end up providing nutrients for a sprouting plant, the flesh must fall off the seed before it can begin to germinate. This is why you don't normally plant a whole peach, but only the pit. The primary purpose of a fruit, therefore, is to convince an animal to consume it along with the seed. This ensures that the seed will germinate at some distance from its parent, reducing competition between genetically kin beings.

Even so, fruiting plants still seem to attempt to reduce the pain caused by having a body part removed. While the fruit is developing, the plant takes measures to ensure that it is not eaten prematurely: the unripe fruit usually remains green so that it is less easily distinguished from its surroundings, it usually doesn't taste appealing, and its stem

remains strong and tough. We are more familiar with the way ripening reverses the first two qualities, but many of us no longer pick our fruit directly from the plant, and may be less likely to recognize the last. As a fruit becomes ready to be eaten, its stem gets smaller and drier, and the connective joints between fruit and stem and between stem and stalk become more loosely attached until the fruit may fall off the plant at just a touch, reducing the likelihood of tearing. We might think of this as similar to a young human losing a tooth, in that the looser it gets, the less painful it is when finally pulled. If it is never pulled, it will eventually come out on its own, painlessly or nearly so. A fruit will also eventually fall, although falling is not its goal; one way or another, what it wants is to be eaten so that the seed it contains will germinate somewhere else.

Of course, there are exceptions to all the botanical tendencies described here. Jacques Derrida bluntly reminds us that “each time a philosopher, or anyone else, says “The Animal” in the singular and without further ado...he utters an *asinanity*,”¹⁶⁰ and the variation from species to species and from individual to individual is as great in the plant kingdom as in the animal kingdom. The problems of discussing what a plant might “want” are further complicated by the fact that so many plant species are fully or semi-domesticated—for instance, remember our old friend the garden cucumber, whose human cultivation is so ancient that we cannot say with anything approaching certainty what it might have looked or behaved like “in the wild.” In this case and in many others, it is impossible to remove human influence from an analysis of the plant’s behavior, which means that it isn’t always obvious or easy to distinguish whether a particular trait is more indicative of botanic desires or of human desires.

¹⁶⁰ Derrida, Jacques. *The Animal That Therefore I Am*. Edited by Marie-Luise Mallet, translated by David Wills, Fordham UP, 2008, p. 31.

What we can do, then, is to weigh the needs and desires of a plant against the needs and desires of humans, and to compare more-domesticated species, such as bananas and cucumbers, against less-domesticated species, like blackberries and persimmons. For instance, the Red Delicious apple has been bred to produce a larger fruit than its wilder relative the crabapple, which has resulted in the Red Delicious having a tougher stem when ripe than the crabapple. As a native of Europe and central Asia, the crabapple has less competition from other fruiting trees than a species native to the tropics might have, so the crabapple is able to compete without putting energy into producing large fruit; it therefore doesn't need a tough stem that might be more likely to be damaged and hurt when something comes along and pulls the fruit off the branch. Domestication of the crabapple has skewed this cost-benefit balance, resulting in apple trees that produce fruit larger than strictly necessary for propagation. On the other hand, humans tend to choose to domesticate those species that lend themselves to it, so that a fruiting tree which resists developing larger fruit and tougher stems to support that fruit might never become domesticated in the first place.

In other words, no living thing exists within a vacuum, and plants, just like any other living thing, attempt to balance costs and benefits in such a way that they are best positioned to flourish within a constantly changing environment. Many of them are willing to not only accept consumption but to actively and persuasively invite it; however, left to their own devices, they will find ways to do so while also minimizing the pain of such offerings.

At the outset of this chapter, I claimed that the goal was to posit certain uncertainty about whether or not plants can feel pain, but I also claimed that the

resistance to that idea is so strong that achieving this goal required positing *certainly* that they *can* feel pain. I have made the case for plant pain to the best of my ability; however, my hope is not that you will be convinced that plants can be experience the sensation of pain, but rather that even the most obvious conceptual “truths” about plants deserve to be troubled. Perhaps more importantly, doing so ends up troubling—in very complex ways—some of the most obvious conceptual “truths” about ourselves and our relationships with others in the world. Thinking about our ethical engagements with nonhumans may be yet another way of centering the human; however, as the next chapter takes up, it is not a simple case of anthropocentrism.

Chapter 5: Anthropomorphism and Anthropocentrism

If we look past the conventions of animated feature films that allow for thinking, talking, language-using apes, we are left with thinking, talking, language-using apes.

—Alex C. Parrish, “‘Don’t Try to Kid Me, Man-Cub’:

Re-Animaling Rhetoric in Theory and Practice”

Of course what I felt then as an ape I can represent now only in human terms, and therefore I misrepresent it, but although I cannot reach back to the truth of the old ape life, there is no doubt that it lies somewhere in the direction I have indicated.

—Franz Kafka, “A Report to an Academy”

Tell me I’m a turtle. Make me feel better.

—Nicole Walker, “The Inclusiveness of Metaphor”

Prequel

Consider this chapter a prequel. It is the origin story of a character that plays a significant role in the chapters that precede it, an origin story written after the stories that it offers an origin for, a prequel that only came to appear necessary through the course of developing the work that it follows. The “character” here is anthropomorphism, and the necessity of a prequel for the anthropomorphism that appears in the preceding chapters is two-fold: first, it is one of the primary methods of reconceptualizing plants that is employed in this dissertation, yet this character’s motivations have not been made visible—anthropomorphism is running around doing all sorts of things to other characters as well as the plot, but so far it has no backstory. My project is not alone in this;

anthropomorphism is the site of a particular tension within much posthumanist work, a tension that is often acknowledged but rarely investigated, as we'll see later in the chapter when we turn to scholars like Nathan Stormer and Bridie McGreavy, Jane Bennett, and Bruno Latour. The tension is rooted, on the one hand, in the fact that calling something "anthropomorphism" is always delivered as an accusation, and on the other, in a growing sense within posthumanism that anthropomorphizing is unavoidable, necessary, or useful. The desire to anthropomorphize coupled with the desire to deflect the accusation means that acknowledging that your own project even smells like anthropomorphism is always presented as a defense. Since anthropomorphism itself is never the primary site of inquiry for these projects, the defense tends to be rushed, often taking no more than a paragraph. The result of this cursory treatment is that neither the critique nor the defense of anthropomorphism get more than, well, a cursory treatment—what has become a "main character" for me has been a cameo in other work. The current chapter takes up anthropomorphism, and more specifically "the anthropomorphism accusation," as primary sites of inquiry in order to articulate some of their effects and begin theorizing their role in posthumanism.

I distinguish between *anthropomorphism*—using human terms to talk about nonhumans—and *the anthropomorphism accusation*—the value-laden assumption that using human terms to talk about nonhumans is always inaccurate and always to be avoided. The anthropomorphism accusation is, to one degree or another, embedded in every discourse with the possible exception of art, and is so deeply embedded that it does not require explanation or argument; simply pointing out the existence of anthropomorphism is considered sufficient grounds for critique. Though the argument

can be made that the accusation has the roots of its justification in scientific discourse, rhetoric and the humanities more broadly have developed out of the same humanist tradition that modern science owes its values to. Science may adhere to the anthropomorphism accusation more strictly than rhetoric, but the accusation carries just as much weight when deployed in the humanities as in the sciences. In other words, rhetoric may be slower to blow the whistle, but the rule is implemented just the same once the whistle is blown.

Since metaphor is very much at the heart of this conversation, allow me what may seem like a detour in order to develop a metaphor for us to go forward with. In HBO's TV series *WestWorld*,¹⁶¹ one of season one's major reveals, both to the audience and to the character Bernard, is that Bernard is a robot rather than a human. This reveal is accomplished when Bernard finds a schematic of his own mechanical body and responds "It doesn't look like anything to me." It's not the first time we've heard this line; several other characters who the audience knows as robots respond this way whenever they encounter something, usually an image, that in some way suggests that the theme park they live in isn't real, or at least isn't the whole of reality. In hindsight, we have been offered clues that Bernard himself is a robot—so many clues, in fact, that the "reveal" wasn't so much revelation as confirmation. The hindsight-based hints that Bernard is a robot often take the form of his inability to see something, such as when he looks at a picture on Ford's desk and sees two people in it, rather than three. The third person in the

¹⁶¹ In case a brief description is helpful: *WestWorld* takes place in the future, at a theme park modeled on the American West and populated by robots who are largely indistinguishable from humans. One of the main appeals of this theme park is that humans are allowed to do literally anything to the robots with no risk to themselves, much like playing a real-life video game. The central conflict lies in the robots' blossoming self-awareness, and in the coming consequences once they realize how they have been treated.

picture, the one that Bernard cannot see, turns out to be the real human being that Bernard is modeled after, and would therefore cause Bernard to begin asking questions that would eventually lead to his discovery that he is a robot rather than a human. To make sure this kind of thing doesn't happen, Ford has programmed the robots to be literally unable to see anything that would lead to these kinds of questions.

I'm interested in all of this for a few reasons. First: one of the necessary components here is that there is a sharp distinction between "real" reality and the constructed reality of the theme park. The robots are designed to be as realistic as possible within this fictional setting, and the method used to achieve this is to program them to believe that the fictional setting is real, and that they are real people who live there. In other words, the audience is made hyperaware of how realistic the robots are by being made hyperaware of the border around the park. One of the reasons that Bernard's origin is so unsettling and sinister is that it troubles that clear border: Bernard has so far been free from submersion in the fiction of the park itself, living his life out in "real" reality instead. But here we discover that Bernard is not only a robot, but is also just as deeply submerged in an externally-imposed fiction as every other robot in the place; the fiction is imposed from the outside but exists within the robots' own minds—getting out of the park and into "real" reality would not necessarily break it.

Second: in order to maintain this submersion, anything that might break the fourth wall for the robots is blanked out of their view, both in the sense of their worldview and in the sense of their literal ability to see. For most of the robots, this means that they are unable to see any evidence of the existence of the world outside the park or of the previous roles that they've played within it. Bernard, again the exception, is not shielded

from evidence that, say, Tokyo exists, or that the park is just a park. He is, however, prevented from seeing evidence that he is not human, including his inability to see the door to the lab containing such evidence.

Third, and most relevant: the repeated verbal demarcation of this phenomenon is not “I can’t see anything” or “There’s nothing here,” but “This doesn’t look like anything to me.” This particular phrasing suggests not simply a failure of vision, but a failure of metaphor—this doesn’t look *like* anything to me—and it situates that failure of metaphor within a particular perspective—this doesn’t look like anything *to me*. It encapsulates the relationship between our ability to see, to *notice* something, and the referents that we may or may not have available for comparison. This is not about cognition, but about *recognition*, putting a name to and/or acknowledging the existence of something, an ability which is here framed as being dependent on a likeness or similarity that is itself dependent on perspective.

So what we have here is an externally-imposed but internally-located blind spot that blocks recognition by preventing likeness from being established, in order to maintain a strict border around a constructed reality so that its constructedness is never acknowledged. In this chapter, I argue that the anthropomorphism accusation is *an externally-imposed but internally-located blind spot that blocks recognition by preventing likeness from being established, in order to maintain a strict border around a constructed reality so that its constructedness is never acknowledged*.

Sometimes the intention behind the accusation is a noble one, as when we wish to attend to difference and are cautious of figuring nonhumans from a presumption of lack. Often, the accusation is framed around a concern for accuracy—to anthropomorphize an

oxpecker by saying it is friends with a rhinoceros is *inaccurate*.¹⁶² In any case, accusing someone else of committing anthropomorphism should be suspect if only because it is such an easy critique to make; accusers often see no need to defend these critiques, but instead point out the presence of anthropomorphism and let it stand as though it were a critique that needed no defending, an obvious and inherent flaw in a writer's work.

Again, this anthropomorphism accusation, the simple identification of anthropomorphism as an obvious and unquestioned problem, is deeply embedded in scholarship across disciplines, though we see a particular anxiety about it in works that take up or rub against scientific discourse.

Cameos: Anthropomorphism is Wrong

I would have liked to begin this analysis of the anthropomorphism accusation as a question of accuracy with an entire section on its presence in the sciences; however, the accusation is so embedded and nebulous that it's difficult to find examples of scientists specifically raising the concern at all, and more difficult still to find scientific arguments laying out the perceived problems with anthropomorphizing. Instead, the manifestations we tend to find are: 1.) language that bends around the accusation, demonstrating the accusation's unseen presence like light bending around a black hole, or 2.) short, quick critiques of someone else's indulgence in anthropomorphism. We have already seen some instances of the first, like Chapter 2's Jandér and Herre, who go to such lengths to avoid saying that the fig tree "punishes" the wasp for cheating, instead opting for the presumably more accurate passivization of the tree that is achieved by the noun

¹⁶² This example is taken from Patricia A. Ganea, Caitlin F. Canfield, Kadria Simons-Ghafari, and Tommy Chou, "Do Cavies Talk? The Effect of Anthropomorphic Picture Books on Children's Knowledge about Animals." *Frontiers in Psychology*, vol. 5, 2014, pp. 1-9. Within this study, the researchers tellingly labeled their two groups of picture books "Anthropomorphic Books" and "Factual Books."

“sanctions.” We saw it again in Chapter 3’s open letter against the term “plant neurobiology,” which grounds its opposition in the inaccuracy of the “claim” that plants have neurons (which was never the claim).

Here, I’d like to turn to a few examples of the second manifestation—short critiques of another’s anthropomorphic indulgence—in order to demonstrate some of their features. For instance, Lucy G. Sullivan’s “Myth, Metaphor, and Hypothesis: How Anthropomorphism Defeats Science”¹⁶³ is less an articulation of the ways anthropomorphism might interfere with the goal of scientific accuracy, as its title might suggest, and more a lament that Richard Dawkins’s *The Selfish Gene* was responsible for a wave of careless anthropomorphizing in biology. The specific term “selfish” is dissatisfactory to Sullivan, who sees it as supportive of the political-economic philosophy of utilitarian self-interest. Her critique of biology works that have been “infected”¹⁶⁴ by Dawkins’s anthropomorphism, however, focuses primarily on the inaccuracy of their scientific claims rather than on their politics. In the one example that she does not take to task for inaccurate findings or interpretation of findings, Sullivan still dings them on accuracy by arguing that “if one must anthropomorphize, then the state of affairs appears to be better described as cooperation than as competition;”¹⁶⁵ in other words, she offers a more *accurate* anthropomorphism than the authors, a move that she makes more than once. Interestingly, each of her “more accurate” anthropomorphisms is a shift away from war imagery or competitive gaming (such as poker), and toward self-sacrifice and cooperation.

¹⁶³ Sullivan, Lucy G. “Myth, Metaphor, and Hypothesis: How Anthropomorphism Defeats Science.” *Philosophical Transactions: Biological Sciences*, vol. 349, iss. 1328, 1995, pp. 215-18.

¹⁶⁴ *Ibid.*, p. 215.

¹⁶⁵ *Ibid.*, p. 216.

On the surface, this seems in keeping with her discomfort about *The Selfish Gene*'s support of economic utilitarianism. However, while we can certainly recognize a relationship between selfishness and war or selfishness and "winning," neither war nor poker is particularly evocative of modern utilitarian philosophy or even selfishness per se. Instead, Sullivan's concern with all three invocations—selfishness, war or violence, and win-loss competition—shares a more overarching and vague moral overtone: altruism, peace, and cooperation are "right," while selfishness, war, and competition are "wrong." For many of her examples, Sullivan offers an alternative story in which the nonhuman characters of birds, reproductive cells, or genes are actually seen to cooperate rather than compete. In fact, Sullivan ends up claiming that "selfish-gene theory could well be entirely rewritten as a theory of cosanguineally based altruism."¹⁶⁶

Setting aside that this is, at least in part, exactly how the theory was written in the first place, this sort of commentary indicates a preference for thinking about nonhumans in *non-immoral* terms, not just in *amoral* terms. In other words, though Sullivan subtitles her piece "How Anthropomorphism Defeats Science," she seems more concerned with how a particular *version* of anthropomorphism figures scientific subjects in a way that she deems "improper."¹⁶⁷ Further, she associates this anthropomorphic infection of science with creeping political motives, of which science should be "kept clean,"¹⁶⁸ even while blaming the sociological interest in sexual competition on "the sexual antagonism fostered by feminism,"¹⁶⁹ a provocative description which suggests that she herself has at least some degree of political motive. The explicit concern for accuracy ends up

¹⁶⁶ *Ibid.*, p. 217.

¹⁶⁷ *Ibid.*, p. 215.

¹⁶⁸ *Ibid.*

¹⁶⁹ *Ibid.*, p. 217.

obscuring an implicit political dimension of the accusation.

Setting up anthropomorphic inaccuracy as the whipping boy is not unique to Sullivan. A 2010 op-ed by Julian Davies offers another example of this pattern within works by scientists that directly take up the question. Published in *EMBO Reports*, Davies's opinion piece titled "Anthropomorphism in Science"¹⁷⁰ attempts a humorous critique of at least three distinct manifestations of anthropomorphism in microbial science.¹⁷¹ Like Sullivan, Davies uses the language of both accuracy and purity, arguing that "anthropomorphic thinking has *misdirected* biological enquiry" and that our knowledge of microbial communities "remains *tainted* by our anthropomorphism."¹⁷² Here, I'd like to focus on two particular moments in the text, the first a naming of his own language as anthropomorphic.

Echoing Sullivan above, Davies criticizes the tendency for microbiologists to figure microbes in militaristic terms, such as "battlefields" and "chemical weapons," arguing that this figuration blinds researchers to the cooperative behaviors of microbes. Davies suggests that the solution to this problem is to eliminate anthropomorphism from scientific work. Davies, however, uses what he calls an anthropomorphism to argue against this practice while sticking to his argument that anthropomorphism needs to go:

Does ascribing human militaristic means and ends to bacteria make sense? There is enormous diversity in microbial phyla and the biosphere is an extraordinarily

¹⁷⁰ Davies, Julian. "Anthropomorphism in Science." *EMBO Reports*, vol. 11, iss. 10, 2010, p. 721.

¹⁷¹ I say "attempts" because I want to make clear that the humorous style indicates that Davies's argument is not actually trying to thoroughly address the problems he sees, but instead to gesture toward them. I also say "attempts" because, at least for me, the humor here utterly fails and that failure interferes with the argument itself. However, Davies is able to take the matter lightly because he is able to assume that his audience largely shares his assumptions about anthropomorphism in the first place, and it is those assumptions that I'd like to focus on here.

¹⁷² Davies, p. 721. My emphasis.

complex collection of distinct organisms. A given soil sample might contain 10⁹ microbes per gram with a thousand or more species living happily together (an anthropomorphic statement if there ever was one).¹⁷³

Again, Davies claims that anthropomorphism is the problem, even though it seems that he really only has a problem with certain kinds of anthropomorphism—and again, the “certain kind” is militaristic anthropomorphism, which he deems inaccurate. His response is to simultaneously offer a more accurate anthropomorphism and to call for eliminating anthropomorphism altogether.

Further, the “more accurate” version that Davies identifies as a particularly egregious anthropomorphism (“an anthropomorphic statement if there ever was one”) is, well, not all that *anthropomorphic*. The only part of “living happily together” that we could even arguably apply on a humans-only basis is “happily;” certainly “living,” “together,” and “living together” are things that other creatures do all the time. Some do continue to assert that animals do not experience emotion, but the number of experts holding that position are dwindling.¹⁷⁴ While we may not have evidence that bacteria experience happiness, we do have evidence that happiness is not a uniquely human capacity. As with many so-called “anthropomorphisms,” this trait does not in fact “properly belong” to humans at all; if we truly were concerned with accuracy, we would have to describe this as a zoomorphism. However, I have yet to see a single instance of a zoomorphism accusation; instead, we claim for our own any trait that we see as

¹⁷³ *Ibid.*

¹⁷⁴ For a useful summary of such research, see Marc Bekoff, “Animal Emotions: Exploring Passionate Natures: Current Interdisciplinary Research Provides Compelling Evidence that Many Animals Experience Such Emotions as Joy, Fear, Love, Despair, and Grief—We Are Not Alone.” *BioScience*, vol. 50, iss. 10, 2000, pp. 861-870.

improperly attributed, just as Davies here claims “living happily together” as properly belonging to humans by calling it an *anthropomorphism*.

The second moment in the text that I’d like to draw attention to is Davies’s set of hypothetical examples of anthropomorphism in the microbial sciences. To open up the discussion early in the piece, Davies refers to the susceptibility of microbial science to “sentimental anthropomorphism,” describing the scientific literature as

littered with examples of bacteria having to ‘make a choice to use a particular substrate’ or a ‘decision to make a compound’ and even ‘needing something.’¹⁷⁵

The first two examples make a certain amount of sense, since intentionality is still widely considered to be a uniquely human trait (though, as I argued in Chapter 3, this position is problematic). The third, though, is mystifying. Even if we take Davies’s humorous approach into account, it is difficult to see how describing any living thing as “needing something” could possibly qualify as an anthropomorphism, or even as a zoomorphism. Suggesting that humans are the only creatures that might need something by calling that phrase an anthropomorphism is an extreme example of how the anthropomorphism accusation can become an easy, blanket critique that allows us to point fingers without defending, or even necessarily thinking too deeply about, our own finger-pointing.

These two writers are not unique. Together, Davies and Sullivan illustrate a pattern that develops when we try to directly address the problem of anthropomorphism, particularly in the sciences where the accusation is embedded so deeply that the problem seems too obvious to require explanation. While lamenting the inaccuracy of anthropomorphizing, we play fast and loose with the accuracy of the term itself.

¹⁷⁵ Davies, p. 721.

Simultaneously, we can't help but offer up anthropomorphisms that do the job better; if they aren't accurate, then they're at least less inaccurate. Moreover, we tend to be quite selective about the targets of the anthropomorphism accusation, calling out certain instances while dismissing, failing to notice, or even actively deploying others, all while continuing to argue that anthropomorphism itself, as a *whole*, is bad. Finally, woven within this concern for accuracy is a moral element that manifests more or less consistently: we are even more critical of anthropomorphizing nonhumans when the "human" qualities being attributed are ones we don't like about ourselves, like violence or selfishness.

Cameos: Anthropomorphism is *Wrong*

Science historian Lorraine Daston pointedly addresses this moral element,¹⁷⁶ describing the scientific orientation toward anthropomorphism at the end of the twentieth century as not only a failure of accuracy but also a failure of morality:

We regard anthropocentrism as the childish vanity that makes man the measure of all things, and as a violation of the ideal of aperspectival objectivity...It is because we believe that anthropomorphism is *caused* by anthropocentrism that we find it reprehensible as well as erroneous, arrogant as well as confused.¹⁷⁷

This moral dimension of the anthropomorphism accusation, the idea that anthropomorphism isn't just wrong but also *wrong*, may help explain why writers like Sullivan and Davies end up with such similar targets for their accusations—anthropomorphism at its most immoral takes up immoral human behavior and attributes it

¹⁷⁶ Daston, Lorraine. "How Nature Became the Other: Anthropomorphism and Anthropocentrism in Early Modern Natural Philosophy." *Biology as Society, Society as Biology: Metaphors*, Springer, 1995, pp. 37-56.

¹⁷⁷ *Ibid.*, p. 38-9. Original emphasis.

to nonhumans, doubling up on the wronging.

Writers within science studies¹⁷⁸ are explicitly aware of the moral dimension of anthropomorphism, especially when defending their own work against the accusation. In their 2017 article “Thinking Ecologically About Rhetoric’s Ontology,” Nathan Stormer and Bridie McGreavy take a moment to deflect potential accusations of anthropomorphizing mud, clams, and other nonhumans in their investigation of the aquaculture of Frenchman Bay, Maine.¹⁷⁹ Relying heavily on Jane Bennett’s defense of anthropomorphism (itself discussed below), Stormer and McGreavy quickly come to the following conclusion:

We cannot avoid anthropomorphism. *Critical* anthropomorphism is not appropriative, not colonization by representation. Unlike *anthropo-centrism*, *anthropo-morphism* is humanity as mutable form and makes possible “a comparison of powers that leads us to discover more in the body than we know, and hence more in the mind than we are conscious of” (Deleuze 1988, 90). It’s as much about us becoming animal or becoming water or mud as about the animal becoming human, as we act *with* extra-creaturely materialities and they with us (Deleuze and Guattari 1987, 233-309).¹⁸⁰

I have here quoted nearly half the discussion of anthropomorphism that appears in this piece, with the entire discussion taking up a single paragraph. Such a cursory treatment

¹⁷⁸ A loose interdisciplinary category that I’m here using to describe projects in both the humanities and the social sciences that make interventions into the processes, the tools, and especially the assumptions at work in scientific practice.

¹⁷⁹ Stormer, Nathan and Bridie McGreavy. “Thinking Ecologically About Rhetoric’s Ontology: Capacity, Vulnerability, and Resilience.” *Philosophy and Rhetoric*, vol. 50, no. 1, 2017, pp. 1-25.

¹⁸⁰ *Ibid.*, p. 9. Original emphasis.

is common, but it's also problematic in that it tends to result in a reductive depiction of how anthropomorphism actually functions.

First, there is more work to be done on the presumably positive notion of becoming that is at play here. Bear with me while I “anthropomorphize” this particular intellectual move by describing it in entirely human terms: what would it look like if we took a quality “belonging” to a more powerful group of humans and “extended” it to a less powerful group of humans, and defended such a gesture on the basis of a mutual becoming? The very concept of *transforming* that is inherent in becoming should throw up some clear red flags when thought in terms of human alterity: engaging othered people should not be dependent on transforming them into something more like us, and the addendum that we ourselves are also becoming/transforming into something more like them, only raises this to benevolent racism (or sexism or ableism) at best. While thinking about anthropomorphism does raise the specter of transformation/becoming, which then seems to offer a conceptual link to Deleuzian becoming, collapsing these three terms together does each of them a disservice and misses an opportunity to theorize the ways that these concepts interact, interconstitute, and interconflict with each other.

Further, Stormer and McGreavy do not spend enough time here on the question they are addressing to make sure that their terms make sense—notably, appropriation and colonization do not make as much sense as it may appear on the surface.

Anthropomorphism, “critical” or otherwise, is understood to take what “belongs” to the empowered, the human, and give it to the disempowered, the nonhuman. Both appropriation and colonization are generally used to indicate a taking that moves in the opposite direction, from the disempowered to the empowered. Therefore, to say that

“critical anthropomorphism” isn’t appropriative or that it isn’t colonization is accurate, but only in the same way that labeling a bottle of water “gluten-free” is accurate—technically correct, but somewhat disingenuously suggesting that some or all other versions *do* contain what is here claimed to be absent. In attempting a quick deflection of the anthropomorphism accusation and a brief side-stepping of the moral dimension of the question, Stormer and McGreavy leave the anthropomorphism accusation intact, deflecting it from themselves to a certain degree but never actually challenging its premise.

Which brings us to another complicating factor that must be dealt with here: anthropomorphism cuts both ways in that it can operate in the service of maintaining anthropocentrism or in the service of challenging it. In the aforementioned “How Nature Became the Other,” Lorraine Daston argues against the common narrative that the rejection of anthropomorphism in seventeenth-century natural philosophy formed the basis of modern science, instead claiming that the twentieth-century rejection of anthropomorphism and the seventeenth-century rejection of anthropomorphism are motivated by opposite relationships to anthropocentrism: “We [20th C. scientists] are antianthropomorphism because we are antianthropocentrism; they [17th C. natural philosophers] were antianthropomorphism because they were *proanthropocentrism*.”¹⁸¹ The thrust of this argument is that the natural philosophers who vehemently opposed anthropomorphizing nature did so on the basis of human distinction and superiority, assuming that we are fundamentally different from and superior to every other entity and that extending explicitly human qualities to nonhumans constitutes a kind of blasphemy.

¹⁸¹ Daston, p. 39. Original emphasis.

Daston's investigation illustrates the complexity of anthropocentrism's functions and manifestations, and lays bare the ways in which either embracing or rejecting anthropocentrism does not necessarily provide a roadmap toward embracing or rejecting anthropomorphism.

Like "humor" or "sexuality," "anthropomorphism" is a broad term covering a large array of specific manifestations, and it can be deployed either in the service of a dominant ideology or in challenge to that ideology. For our purposes here, two of the primary attributes of anthropocentrism are: 1.) the tendency to interpret the world from a pointedly human perspective, and 2.) the tendency to assume that humans are unique among and usually superior to other living beings. The anthropomorphism accusation often claims itself to be anti-anthropocentric, but it can only make that case for itself if we define anthropocentrism in the first sense of maintaining a default human perspective and ignore the second sense of assuming human uniqueness and superiority. Davies thinks that attributing happiness to microbes is to speak of microbes in human terms. This marks happiness as a human capacity, functionally excluding other creatures and claiming happiness as our own human property. Sullivan claims selfishness for humans, while Stormer and McGreavy claim for us the capacity for motive and the capacity to have something "matter"¹⁸² to you. I have seen the anthropomorphism accusation leveled at having a "family," having "interests," "helping," "choosing," and "attacking"—and again, one of our authors even used "needing something" as an example of anthropomorphic language. In many ways, the anthropomorphism accusation has become shorthand for telling someone that they are wrong, without the burden of

¹⁸² Stormer and McGreavy, p. 9.

explaining what exactly they are wrong about. It carries such weight that many may never stop to consider whether birds can be selfish, whether clams can have motive, or whether bacteria do in fact have needs, and seemingly no one stops to consider that having needs is unquestionably *not* a uniquely human quality.

Yet the double-claim of the anthropomorphism accusation is exactly that—not only *this creature does not have X capacity*, but also *X capacity belongs to humans*. Now, to be clear: I am not necessarily arguing with anyone who thinks genes cannot be selfish, or with anyone who thinks that bacteria cannot experience happiness or even that bacteria do not have needs (though I am more skeptical about that one). I am arguing, however, that claiming those capacities and traits as properly *human* is vastly detrimental not only to our understanding of other creatures as well as ourselves, but also to our ability to ethically attend the world. In our concern for making sure we do not impose a purely human perspective onto nonhumans—a task as impossible as it is necessary—we do not even realize just how great a swathe of capacities and abilities we are planting our flag atop. If I’ve made this sound like colonization all over again, well—we’ll come back to that. First, though, I want to spend some time characterizing a common move among those who seek to defend themselves against the anthropomorphism accusation, a move that attempts to carve out a space within anthropomorphism whereby it can be deployed ethically.

Cameos: My Anthropomorphism is Not Wrong

Stormer and McGreavy above offer us the first example, defining their own methods as an exception, as a “*critical* anthropomorphism” that isn’t immoral, which lets stand the presumption that unqualified anthropomorphism is immoral; specifically, that it

is “appropriation or colonization by representation.”¹⁸³ As mentioned, they rely heavily on Jane Bennett’s defense against the anthropomorphism accusation in order to make their own.

In a one-and-a-half-page section of *Vibrant Matter* titled “A Note on Anthropomorphism,”¹⁸⁴ Bennett defends her interest in the agency of nonhumans from the anthropomorphism accusation by focusing on what anthropomorphism can do. For Bennett, anthropomorphizing nonhumans can function to heighten attentiveness, which can in turn reveal the “distinctive, material complexity”¹⁸⁵ of the nonhuman in question. In other words, Bennett sees anthropomorphism as a step in a process that begins with recognizing similarity but then turns to recognizing difference:

In a vital materialism, an anthropomorphic element in perception can uncover a whole world of resonances and resemblances [...] 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).¹⁸⁶

She goes on to argue that “a touch of anthropomorphism can catalyze a sensibility [here, the sensibility of Charles Darwin] that finds a world filled not with ontologically distinct categories of beings (subjects and objects) but with variously composed materialities that form confederations.”¹⁸⁷ Finally, Bennett boils her defense down to this: “anthropomorphism can reveal isomorphisms.”¹⁸⁸

Unlike Stormer and McGreavy’s focus on the transformative element of the term,

¹⁸³ *Ibid.*

¹⁸⁴ Bennett, Jane. “A Note on Anthropomorphism.” *Vibrant Matter: A Political Ecology of Things*, Duke UP, 2010, pp. 98-99.

¹⁸⁵ *Ibid.*, p. 99.

¹⁸⁶ *Ibid.*

¹⁸⁷ *Ibid.*

¹⁸⁸ *Ibid.*

Bennett focuses on anthropomorphism as a type of metaphor, functioning to foreground likeness—resonances, resemblances, and isomorphisms—as well as the difference that underwrites the possibility of revealing or uncovering that likeness. What Bennett’s defense does share in common with Stormer and McGreavy’s defense is a gesture toward *exception*. Bennett frames the revelatory power of anthropomorphism within “a vital materialism,” and sets apart the “sensibility” of those like Darwin and herself as being capable of catalyzation by anthropomorphism. Though the exception-gesture is much less central to Bennett’s defense, it does once more suggest that anthropomorphism *normally* functions differently than it is being claimed to function here, that the author’s method of anthropomorphizing is an exception to the rule.

Bruno Latour spends more time theorizing anthropomorphism and eventually he challenges the position from which the accusation can be made rather than simply carving out space for his own deployment of anthropomorphisms. Even so, his challenge has refined over time, demonstrating just how deeply embedded our anxiety about the anthropomorphism accusation really is—even for a Latour, it takes years to offer a full-throated critique. In *Reassembling the Social*,¹⁸⁹ Latour argues that all figuration, including anthropomorphism, is necessary within the social sciences.¹⁹⁰ He emphasizes that the goal of these moves is not to conflate human with nonhuman, but to differently figure in order to generate new ways of thinking. Latour also argues that figuration happens whether we like it or not, so he calls for practitioners of actor-network theory to more closely attend to the ways in which they can figure an actant, as opposed to attempting to remove figuration from their descriptions of actants. In other words, since

¹⁸⁹ Latour, Bruno. *Reassembling the Social: An Introduction to Actor-Network-Theory*. Oxford UP, 2005.

¹⁹⁰ *Ibid.*, p. 54.

figuration cannot be elided, Latour advises us to more carefully choose *how* we figure.

In the conclusion of the book, Latour returns to anthropomorphism in particular and directly addresses the problems with claiming it as a grounds for critique. He says that to treat an object as a matter of fact is to anthropomorphize that object, since humans sometimes behave as matters of fact (i.e., indisputable unities) for political reasons, while objects never do.¹⁹¹ This counter-intuitive claim—that to treat an object as an indisputable, unified reality is to anthropomorphize it—flips the script on the anthropomorphism accusation by taking the idea seriously. If anthropomorphizing an object means talking about it as though it had human qualities, then we can use it to describe any action that pretends objects are doing something that, in fact, only humans do. For Latour, behaving as an indisputable, unified reality is something that humans do but that objects do not, so talking about objects as though they *do* behave this way qualifies as anthropomorphism. In other words, if anyone’s anthropomorphizing around here, it’s the accusers.

Five years later in “An Attempt at a ‘Compositionist Manifesto,’”¹⁹² Latour has come to a much more radical stance on the issue, arguing that not only is anthropomorphizing objects perfectly acceptable, but that only an anthropocentric worldview would consider it a bad thing in the first place. According to Latour, the ability to critique someone for anthropomorphizing is made possible only by the invention of the “unrealistic” assumption of “action without agency.”¹⁹³ That is, “anthropomorphism” can make sense as a critique only if the accuser first assumes a

¹⁹¹ *Ibid.*, p. 255.

¹⁹² Latour, Bruno. “An Attempt at a ‘Compositionist Manifesto.’” *New Literary History*, vol. 41, 2010, pp. 471-90.

¹⁹³ *Ibid.*, p. 482.

strict divide between (human) subjects and (nonhuman) objects, and then further assumes that subjectivity is necessary for agency. Latour argues that the second assumption is made in order that the first assumption can be maintained, which is why he calls this position “*the most anthropocentric* of all the modes of relation invented...to deal with associations between humans and nonhumans.”¹⁹⁴

Latour does not deny his anthropomorphism, nor is he here simply claiming that it’s unavoidable and should therefore be done attentively. Instead, he argues that it isn’t *anthropomorphism* that is anthropocentric; the anthropomorphism *accusation* is what is anthropocentric, indeed the *most* anthropocentric move in posthumanist studies. This is not quite the same argument as Daston makes above, in which the anthropomorphism accusation can be grounded in either an embrace of anthropocentrism, as with seventeenth-century natural philosophy, or in a rejection of anthropocentrism, as with modern science. Latour instead aligns the anthropomorphism accusation firmly with anthropocentric thinking, and therefore indirectly aligns anthropomorphism itself *against* anthropocentric thinking.

What is held in common by Latour, Bennett, Stormer and McGreavy, and other writers like them is a desire for an ethical anthropomorphism. Their work with nonhumans, particularly with nonhuman agency, has led them to understand anthropomorphism as useful and necessary—useful because of the shifts in thinking as well as the sense of affinity it can produce, and necessary because “humanness” is intricately tied up with agency in our language. Since the primary focus of their projects is not a rumination on anthropomorphism itself, the problem gets addressed within asides,

¹⁹⁴ *Ibid.*, p. 483. Original emphasis.

within cameos that seek to quickly establish grounds for why *this* anthropomorphism is okay so that the authors can move forward unencumbered. That so many writers feel it necessary to pause for these quick cameos is indicative of the pressure of the anthropomorphism accusation. At first, I also tried to preempt the accusation in this way; the current chapter began its life as a three-page section that was bounced around into every other chapter of this dissertation before I finally realized that it didn't fit anywhere because it deserved its own treatment. Like other posthumanist thinkers, I knew that I needed to address the anthropomorphism accusation, but I wanted to get it out of the way so I could get back to the "real question" of my project.

I now wonder if the question of anthropomorphism and its concomitant accusation is, in fact, the "real question" of all posthumanist writing, if wrestling with this question to some extent is what qualifies a piece of writing as posthumanist.¹⁹⁵ It is nothing less than the question of what counts as human and what does not, and what happens to the assumptions of humanism when that border shifts or blurs.

Denouement

So we have a problem. We want a route to ethical anthropomorphism, but we also want to take shortcuts to get there, and shortcuts just won't work. As we have seen with these several examples, attempting to deal with a question this large and nebulous in a transition or a "note" or some other quick aside ends up producing several problems.

First, such defenses are full of missed opportunities for developing a thicker

¹⁹⁵ For the sake of clarity, I want to note that here, as is the case throughout this dissertation, I almost exclusively use the term "posthumanist" in the sense of "beyond Humanism," rather than the other commonly used sense of "beyond the human." In other words, the above claim about posthumanist writing refers to writing that is primarily interested in questioning Humanism's assumptions, rather than investigating human augmentation or technological supplementation.

understanding of anthropomorphism as well as the anthropomorphism accusation. We don't yet know how either of these moves can function or exactly what effects they can produce. Further, these quick, get-it-out-of-the-way defenses operate under an exception-logic almost without fail, leaving the anthropomorphism accusation intact but insisting that *mine* is an exception. I am suspicious of this logic, if only because it answers an easy, "obvious" critique with an easy, "obvious" defense, and we have already seen that the critique is not nearly as obvious as it may seem.

At its most reductive, the critique that I have been calling the anthropomorphism accusation describes itself as being concerned with accuracy. It is inaccurate, so the argument goes, to say that bacteria can be happy or that something might matter to mud and clams. This concern for accuracy is belied, though, by the selectivity of the targets; we seem to be perfectly okay with saying that bacteria live in "communities," for example, or that mud and clams "play a role" in their ecosystems. In addition, the term *anthropomorphism* is itself often used inaccurately within these critiques, as it is frequently applied to traits or capacities that are already known to be shared by creatures other than humans. In these ways, the stated concern for accuracy often works to obscure a political and/or moral dimension of the accusation, hiding the fact that *particular* humanizing metaphors are what we really take issue with and that our attack or rejection of them is motivated by ideology, not objectivity.

All of which is to repeat a statement from the first section of this chapter: the anthropomorphism accusation is an externally-imposed but internally-located blind spot that blocks recognition by preventing likeness from being established, in order to maintain a strict border around a constructed reality so that its constructedness is never

acknowledged. We are told that anthropomorphism is to be avoided, and so we seek to avoid it and police it in others. As Bennett rightly notes, anthropomorphism can establish a recognition of likeness, which the accusation functions to block. The accusation's insistence on accuracy as its fundamental value suggests that "non-anthropomorphic" language describes a pre-existing reality, when in fact the accusation constructs and reconstructs the reality of the human (and therefore of the nonhuman) each time it is deployed against an anthropomorphism and each time it prevents an anthropomorphism from being uttered.

The anthropomorphism accusation does not patrol the border between human and nonhuman; it builds the border. It plants a flag on particular territories by claiming them as properly belonging to the human. Anthropomorphism is said to be problematic in that it describes nonhumans in terms that properly belong to the human; however, it is only in the naming of an utterance as anthropomorphic, in the declaration "this is an anthropomorphism," that human propriety is established. If I say, for instance, that my dog is happy when his friends visit, I have not claimed happiness or friends for humans—quite the opposite. If, however, I or someone else declares that statement an anthropomorphism, that declaration then retroactively plants a human flag on the territory of happiness, friends, or both. This is the primary reason that the current chapter is located where it is, as a prequel to the previous chapter: preemptively attaching the name *anthropomorphism* to my method of describing plants in terms like "breaking up with their pollinator" would have given the game away. Earlier, I said that we'd come back to the question of colonization raised by Stormer and McGreavy. In short, I agree with them: critical anthropomorphism is neither appropriation nor colonization. *No*

anthropomorphism is appropriation or colonization. The anthropomorphism *accusation*, on the other hand, is exactly that. It colonizes by claiming some capacities as human property while its unidirectionality appropriates capacities by refusing to similarly defend them in the other direction—that is, while we colonize “warning” by accusing of anthropomorphism those who say that acacias warn their neighbors of danger, we also appropriate “putting down roots” by the absence of a term “dendromorphism” for the idea that humans put down roots.

If the anthropomorphism accusation rejects anthropocentrism by rejecting a human perspective, it simultaneously embraces anthropocentrism by embracing a superior and unique human essence. Tit for tat, though: if language that gets called anthropomorphism rejects anthropocentrism by rejecting a superior and unique human essence, *it simultaneously embraces anthropocentrism by embracing a human perspective*. Another way of putting this might be: there are two paths that can be considered anthropocentric; the embrace of human superiority is a path to the anthropomorphism accusation, and the embrace of human perspective is a path to what gets called anthropomorphism.

There is no “ethical anthropomorphism.” At least, there is no category of anthropomorphism that is purely and fully “ethical,” no approach or mentality that puts us into the realm of being ethically *right* and allows us to stop having to pay attention. It’s tempting, then, to capitulate to the anthropomorphism accusation and either avoid anthropomorphism altogether or to try to find an out. For instance, rather than the conflation or transformation associated with anthropomorphism, Paul de Man’s

prosopopoeia (as analyzed by Diane Davis) “*bestows*”¹⁹⁶ humanness through figuration, and does so for humans and nonhumans alike. My current investigation could embrace prosopopoeia as its central figure, describing itself as bestowing a semblance of the human onto the plant while maintaining that such a bestowal is all we can ever do for humans (and animals) as well. I prefer, instead, the Robin-Hood gesture of what gets called anthropomorphism: “taking” a capacity that “properly belongs” to the human and handing it over to plants.

There are many reasons for this preference. Language that gets called anthropomorphism can establish likeness and affinity between humans and nonhumans, and, for better or worse, recognizing likeness and affinity tends to reduce the harm of othering (even if it smooths the path for a different kind of harm). Ideally, though, we would not need to establish likeness in order to affirmatively engage otherness, and so this project has attempted to balance the ideal and the pragmatic by anthropomorphizing in order to recognize likeness and defamiliarizing that anthropomorphism in order to re-recognize difference. I have chosen to intensify anthropomorphism, *not* because anthropomorphizing is harmless, but because in this context and at this moment, I feel that the damage of embracing superior human uniqueness is greater than the damage of embracing human perspective, particularly with regard to plants. Further, while it may be impossible to “get out” of either human uniqueness or human perspective, getting out of human uniqueness is, let us say, less impossible. Finally, I prefer to anthropomorphize because the anthropomorphism accusation is so very entrenched in our discourse and, as we learned from Emily Martin, entrenched language habits both deserve and resist

¹⁹⁶ Davis, Diane. “Autozoography: Notes Toward a Rhetoricity of the Living.” *Philosophy and Rhetoric*, vol. 47, no. 4, 2014, pp. 533-53, p. 543. Original emphasis.

disentrenchment; this project embraces and intensifies anthropomorphism because anthropomorphism is the path of most resistance.

Chapter 6: Outroduction

A vegetable garden in the beginning looks so promising
and then after all little by little it grows nothing but vegetables,
nothing, nothing but vegetables.

—Gertrude Stein, *Wars I Have Seen*

It is posed and it is posed. / But in nature it merely grows.

—Wallace Stevens, “Add This to Rhetoric”

Consequences

Here at the close, I’d like to gesture toward some of the work that this dissertation speaks to, but which I have so far set aside in order to narrow the scope of such a potentially wide-ranging project. Just as the Introduction focuses on works that this project grows out of and takes up, this “outroduction” focuses on works that this project grows into—that is, works that have not been taken up in the previous chapters but instead exemplify the ways that *Rhetoric and Plants* has the potential to impact scholarship going forward. First, though, I want to outline some of the consequences of thinking about plants and botanicity that the previous chapters have brought to the surface. As an acknowledgement that this dissertation does not operate on a linear, teleological structure, this brief summary moves backward.

Chapter 5: Anthropomorphism and Anthropocentrism argues that neither fully embracing nor fully rejecting anthropomorphism automatically gets you outside the enclosure of anthropocentrism; rather, there are different registers of anthropocentrism

and using language that gets called anthropomorphic resonates in one register while the anthropomorphism accusation resonates in another. Further, Chapter 5 suggests that the question of anthropomorphism might be the fundamental question of posthumanism, concerned as it is with the border between human and nonhuman as well as with the effects of piercing or moving that border.

Chapter 4: Pain and Ethics argues full-throatedly for a concept of plant pain, *not* primarily in order to convince readers that plants can feel pain, but rather to demonstrate the possibilities for new ways of thinking that become available when we are not limited by the knee-jerk avoidance of anthropomorphizing nonhumans. As the case for plant pain demonstrates, anthropomorphism (or zoomorphism that we prefer to claim as anthropomorphism) is a powerful tool for cultivating affinity even when it's an affinity we'd rather not share, whether because our ethical decisions get more complicated, as with plant pain, or because we'd like to think that "nature" is purer than humanity somehow. Regardless, seeing others as being "like" ourselves is problematic in that it serves to erase difference, but seeing others as being radically unlike ourselves is also problematic in that it can serve to justify continuing to do to them whatever we find convenient, profitable, or pleasurable, and historically has served exactly that justification. In instances where the default is to assume lack of affinity, anthropomorphism can help open our thinking out of this default.

Chapter 3: Mechanism and Mindedness works through various registers of plant intelligence in order to trouble the concept of mechanistic reaction as it is often applied to nonhumans, in part by working to decouple mind from brain and in part by resituating deliberated human response as one species of mechanistic reaction. This approach to

“mechanism” does not seek to define some beings as mechanistic and others as purposive. Instead, it treats “mechanistic reaction” as one method of characterizing behaviors, and it treats “deliberate response” as another method of characterizing behaviors; no more, no less. The former is a characterization that functions to distance us—in this case, rational humans, but this holds no matter which group comprises the “us” in a given instance—from those behaviors and the beings that perform them. The latter characterization aligns the behaviors (and the beings that perform them) with “us,” or with the aspect of ourselves that we’d like to continue holding up as unique and ideal: rationality. However, if human “response” describes the same mechanistic phenomenon as “reaction,” with only a difference in how these phenomena are consciously experienced by us, then response cannot “properly” belong to humans nor reaction to nonhumans.

Chapter 2: Sex and Ambulocentrism is likewise interested in metaphor, but more broadly. Sex is probably the most well-understood of plant behaviors, so plant sex becomes a site for proliferating metaphors to describe plants differently. Taking up Emily Martin’s call to disentrench our deeply entrenched metaphors, we end up bestowing personalities on plants contra her call to avoid doing so. As a result, we are able to acknowledge the complex agency of these rooted beings, which helps us uncover the ways that we tend to associate both agency and communication with mobility, especially locomotion, especially ambulation. Ambulocentrism is a forceful component of rhetorical discourse, made visible by engaging creatures who do not go elsewhere.

In addition to the chapter-by-chapter arguments, there are some threads running through and developing out of *Rhetoric and Plants* that are worth articulating here. One

is that questions of ethics, of how we attend to others, have no simple answers. If the ethical questions raised by this dissertation are taken seriously, then one consequence is that, for instance, dietary decisions can no longer be reduced to “I will *not*” or “I will *only*” eat creatures with such-and-such quality, whether that quality is pain, death, intelligence, intentionality, or whatever. This version of dietary ethics is a momentary attention to otherness, in that the attention lasts only as long as it takes to make the “never creature X” rule. Once in place, the rule allows us to stop attending to our eating, to go right back to consumption without care, just with some creatures set aside as taboo.

This is not an attack on vegetarianism, or a dismissal of any decision not to eat creature X for whatever reason; rather, it is a call to remember that if you do choose to make such a decision, ethicality does not stop there. It is possible, even likely, that my veggie burgers were made from soy beans grown in a monoculture, displacing or killing countless other plants, animals, and people. It’s possible, even likely, that my almond milk contains almonds from a farm in California that uses an obscene amount of water in the midst of a crippling and ongoing drought. It’s possible, even likely, that the cocoa in my chocolate bar was harvested by a child. This does not mean that we should add soy, almonds, and cocoa to our list of things not to eat; rather, it means that if you want to eat ethically, you never get to stop, never get to a point where you’ve figured out the rules and you’re ethical now. To attend otherness is to be present to it, and it therefore always happens in the present, as an ongoing endeavor.

One crucial aspect of attending to otherness is attending to difference. Much work has already gone into positing difference, rather than figuring difference as lack. But attending to difference also means *differentiating*—attending not just to differences

between others and ourselves, but between others and other others. Taken to its extreme, this looks like Derrida's cat, who "isn't the *figure* of a cat," who "doesn't silently enter the bedroom as an allegory for all the cats on the earth."¹⁹⁷ I have not differentiated plants to such a degree, in part because of necessity: I can't talk about the reproductive habits of this dogwood tree in my front yard, since no one has done an experiment on it as far as I know, and I have not lived here long enough to observe anything worth reporting on that front. And besides, you don't care about *this* dogwood (yet). Plants of all kinds are so absent from the conversation that the first step seems, to me, to require more general terms than Derrida's radical specificity.

I have, however, been careful to avoid the other extreme, which collapses all plants into the collective singular: *The Plant*. This degree of nondifferentiation allows for sweeping conclusions that all too often simply reiterate our previously held conceptions of plants, such as when Michael Marder, who specializes in plant-thinking, expounds on "the non-economic generosity of the plant-soul" which offers itself with absolutely no "expectations of returns from the other."¹⁹⁸ While full differentiation can be impossible or counter-productive in a project like *Rhetoric and Plants*, insufficient differentiation remains a problematic temptation. I have attempted to counter it by differentiating by species and by anthropomorphizing the various plants that appear here, bestowing personalities as a method of establishing individuality. There are other ways to strike this balance, of course; the idea is not to suggest a particular method of striking the balance, but to remember that it needs striking.

¹⁹⁷ Derrida, Jacques. *The Animal That Therefore I Am*. Edited by Marie-Luise Mallet, translated by David Wills, Fordham UP, 2008, p. 6, original emphasis.

¹⁹⁸ Marder, Michael. *Plant-Thinking: A Philosophy of Vegetal Life*. Columbia UP, 2013, p. 52.

Speaking of anthropomorphism: yet another thread running throughout this project is that the question to ask of anthropomorphism is not *if*, nor even necessarily *how*, but *why*. No rule set suffices for how to talk about plants. If I wanted to differentiate while also establishing affinity, I had to throw out the rules: often I anthropomorphize, often I avoid it. Sometimes I critique someone for too strenuously avoiding anthropomorphism, sometimes I critique someone for too capriciously indulging in it. The question is always: *at this moment*, what are we trying to accomplish? What kind of plant, what kind of alterity, do we want to construct? Some moments answer that question in favor of anthropomorphizing, while other moments answer against. That deciding is always happening, must always be happening.

The basic assumption of this dissertation is that plants are creatures, but they tend to get conceptualized as objects. This straddling of the animate/inanimate divide means that plants have enormous potential as a site of inquiry for many different schools of thought or subdisciplines. In some ways, the various plant rhetorics reviewed in the Introduction can be thought of as contributing to those differing schools of thought, which may account for the fact that each acknowledges the others without necessarily engaging the others—if, like Matthew Hall, your interest is in the role of plants in various religious philosophies, then Elaine Miller’s book on plants as a figure for feminine subjectivity may not offer you much purchase. If, however, we begin to think of these various plants works not only as botanic contributions to existing subdisciplines but also as a new subdiscipline itself—plant studies, say, as we have recently begun to recognize the category of animal studies—then the vast potential for new lines of thought offered by thinking and talking about plants becomes visible. Here, I’d like to sketch out some of

those potential lines of thought as an invitation for further research by elaborating on potential botanic contributions to two or three existing pieces within new materialism, environmental rhetoric, and pedagogy.

New Materialism

Rhetoric and Plants developed out of animal studies, but it could just as easily have developed out of new materialism. Their occupancy of the liminal space between animate and inanimate potentiates a contribution to the work that new materialist scholars have already been doing to both heighten our concern and care for the purely material as well as to acknowledge the fundamental materiality of the animate, work that shares much in common with Chapter 3's troubling of the minded/mechanistic binary. Unfortunately, my research has shown that plants are largely absent from new materialism's considerations, an absence that I see as a missed opportunity.

For instance, Mel Y. Chen's *Animacies: Biopolitics, Racial Mattering, and Queer Affect* troubles the simple categorical distinction between animacy, aligned with mind, and materiality, aligned with body. *Animacies* considers all material to exist on an animacy spectrum, rather than being considered either animate or inanimate—in other words, it is an investigation that seems particularly well-poised to broach the subject of plants. Chen wants to think animacy as a scale on which “inanimates,” such as stones, “definitively occupy a scalar position (near zero);” that is, they do not lack or “oppose” animacy completely, but rather exist somewhere on the animacy spectrum.¹⁹⁹ Like many other works of new materialism, *Animacies* is quite interested in humans, animals, and inanimate objects, but gives short shrift to plants, even when discussing a work that

¹⁹⁹ Chen, Mel Y. *Animacies: Biopolitics, Racial Mattering, and Queer Affect*. Duke UP, 2012, p. 5.

specifically addresses all four of these “types” of bodies: Aristotle’s *De Anima*. After paraphrasing Aristotle’s argument, Chen suggests, with great qualification, that we consider the affective nature of “vegetables”: “We *might* therefore say, *if* we took Aristotle to *one* end point, that it is *possible* to conceive of *something like* the “affect” of a vegetable.”²⁰⁰ This hesitation to grant affective capacities to plants is striking when it appears within a work that is willing to boldly place stones on the animacy scale.

This may be easier to understand if we look to another moment in which Chen discusses “vegetables,” during her examination of the phrase “I just don’t want to be a vegetable,” the more common way of referring to the medical term “persistent vegetative state.” Chen notes that we choose plants as our referent “as a disavowal of the next relevant position” on the hierarchical scale of animacy, and that comparing ourselves to stones or statues would not have the same impact: “some kind of animacy, some kind of thriving and sensitivity, must be preserved for the person’s denial to highlight the major locus of difference between what is desired [i.e., cognition] and what is undesired [loss of cognition].”²⁰¹ However, Chen then goes on to discuss vegetables in such a way that it is difficult to tell whether or not Chen actually considers them higher on the animacy scale than stones: “vegetables, believed to be living, are not at the bottom of the animacy hierarchy, as stones seem to be; for instance, when humans and nonhuman animals eat them, they have specific effects and can be either nourishing or toxic to bodily systems.”²⁰² Chen’s evidence that vegetables are higher on the scale than stones is that vegetables affect animals when eaten—a claim that applies to stones with equal accuracy.

²⁰⁰ *Ibid.*, p. 4. My emphasis.

²⁰¹ *Ibid.*, p. 41.

²⁰² *Ibid.*

Given the context of her discussion and her willingness to hierarchize, Chen's reduction of vegetal animacy to its participation as food in animal metabolisms seems like a severe oversight; however, with the follow-up claim that vegetables "are dependent, not freestanding plants, but partaking of plants' nutrients,"²⁰³ it seems that Chen might not be using the term "vegetable" as a synonym for "plant," as Aristotle's translator did. Instead, Chen might actually be taking seriously the distinction between "plant" as living being and "vegetable" as a common term for the part of the plant that we usually eat. When Chen analyzes the phrase "I don't want to become a vegetable," she seems to be reading the term "vegetable" as "a particular kind of foodstuff," rather than as "vegetation." If this is the case, though, then we must turn back to the qualification present in the earlier suggestion that "it is possible to conceive of something like the 'affect' of a vegetable." If the vegetable referred to here is also being conceived as an item of food rather than as a living plant, then it would seem to share much in common with the stone that Chen unequivocally grants affect, agency, and animacy. Why, then, the hesitation when raising the possibility that a vegetable—whether in the sense of "foodstuff," or perhaps even more so in the sense of the living "plant"—might share these qualities?

Chen is certainly not alone in her backgrounding of plants as living beings. In *Bodily Natures*, Stacy Alaimo is more interested in the "fruits of the dirt" than in the fruits of the plant in her discussion of Ladelle McWhorter's epiphany about her Doritos.²⁰⁴ Granted, the passage she cites is itself more interested in dirt than in the

²⁰³ *Ibid.*

²⁰⁴ Alaimo, Stacy. *Bodily Natures: Science, Environment, and the Material Self*. Indiana UP, 2010, p. 12-13.

tomato plants that gave rise to McWhorter's deep and dirty thinking. In short, the story is this: McWhorter, jealous that her new neighbors' tomato plants were so much bigger and healthier-looking than her own, started to research composting methods and implemented one called "bastard trenching," in which you dig trenches in the spot that will later be planted, toss in your compostable scraps, and cover those scraps with dirt; a year or so later, you plant over that spot. Throughout the process of reading about and producing this compost, McWhorter comes to develop the deep realization that dirt is alive, not inert, and that if she wants healthy plants, she has to feed the dirt. While snacking on Doritos and surveying her trenches, McWhorter considered and then immediately rejected the idea of tossing the Doritos crumbs into the trench, saying to herself: "I can't feed that crap to my dirt."²⁰⁵ This thought led to the epiphany that dirt and flesh—her own flesh—are "cousins," and that it makes no sense to feed your flesh with something that you will not feed your dirt. McWhorter ends this anecdote by flatly stating, "I haven't purchased a bag of Doritos since."²⁰⁶

Though this Dorito epiphany is immediately concerned with the vitality of dirt, McWhorter spends several pages leading up to this story thinking about the materiality of plants, an interest that developed from gardening.²⁰⁷ She doesn't delve deeply into plant lives or thoroughly analyze her relationship with them, but she does muse on bark as the main distinction between a bush bean and a catalpa tree, learns how to anticipate plant needs by observing their bodies, and so on. Alaimo's interest in recounting this tale,

²⁰⁵ McWhorter, Ladelle. *Bodies and Pleasures: Foucault and the Politics of Sexual Normalization*. Indiana UP, 1999, p. 167.

²⁰⁶ *Ibid.*

²⁰⁷ She is not alone in this. If I have convinced you to begin thinking about plants, but you find it difficult learning how to keep them in mind in the weeks and months to come, plant a garden—you'll find yourself unable to *stop* thinking about them.

however, elides the plants almost entirely, noting that “although McWhorter begins with a simple desire for a tomato, her scenario moves in the opposite direction, extending her own flesh into the dirt, rather than merely incorporating the fruits of the dirt into herself.”²⁰⁸ Alaimo suggests that one reason why McWhorter does not spend time “trac[ing] the literal route through which dirt becomes flesh via the tomato”²⁰⁹ is perhaps due to the tendency of thinking about food to become thinking about incorporation, about how “food disappears into the human body, which remains solidly bounded.”²¹⁰

There are a few points that I want to make about Alaimo’s interest in McWhorter’s dirt; however, I want to preface those points by acknowledging the fascinating and valuable work that Alaimo is doing. It’s not that I’m criticizing Alaimo for doing her project instead of doing mine; rather, I wish to note that a consideration of the role that the plant is playing within this scenario has the potential to open up Alaimo’s own interest into new and rich directions. Alaimo, like Chen above and like Bennett below, figures food as an object, which, of course, it is. However, Alaimo’s admiration for McWhorter’s dirt-flesh connection ignores that the tomato *is itself flesh*; the flesh of a living being, disincorporated and desired and thus rendered food, object. The living tomato plant is completely obfuscated in Alaimo’s retelling of this story, as it was not in McWhorter’s. Alaimo is interested here in the transcorporeality of food, in the ways that eating “transforms plants and animals into human flesh,”²¹¹ because she is interested in the transcorporeality of human bodies. Skipping from the dirt to the fruit and eliding the plant glosses one of these transformations—we might say not that eating transforms

²⁰⁸ Alaimo, *Bodily Natures*, p. 13.

²⁰⁹ *Ibid.*, p. 12.

²¹⁰ *Ibid.*, p. 13.

²¹¹ *Ibid.*, p. 12.

plants and animals, but rather plant and animal *flesh* into human flesh and thereby make Alaimo's transcorporeality even more trans- and even more -corporeal.

Similarly, the vitality of food that Jane Bennett seeks to establish could be yet more vital, or vital in a yet another register, if we trace its materiality back to its once-living form. In the third chapter of *Vibrant Matter*, Bennett treats food as an "actant inside and alongside intention-forming, morality-(dis)obeying, language-using, reflexivity-wielding, and culture-making humans, and as an inducer-producer of salient, public effects."²¹² Bennett convincingly argues that a conceptualization of food as sharing a common material vitality with humans could produce a set of practices that are less wasteful and more mindful: "If I am right that an image of inert matter helps animate our current practice of aggressively wasteful and planet-endangering consumption, then a materiality experienced as a lively force with agentic capacity could animate a more ecologically sustainable public."²¹³ However, as Bennett describes the consequences of her own analysis of the vitality of omega-3 fatty acids, "to take seriously the efficacy of nonhuman fat is, then, not only to shift one's idea about what counts as an actor but also to focus one's attention away from individuals and onto actants in assemblages."²¹⁴ Bennett has good reason to want to shift attention away from individuals, since the "individuals" here are human ones, the particular people affected by food in particular ways, and she is interested in focusing attention instead on the agency of the food itself. Further, "individuals" are often conceptualized as purposive subjects rather than forces in an assemblage.

²¹² Bennett, Jane. *Vibrant Matter: A Political Ecology of Things*. Duke UP, 2010, p. 39.

²¹³ *Ibid.*, p. 51.

²¹⁴ *Ibid.*, p. 42.

As this dissertation attempts to show, though, there is value in talking about nonhumans in human terms—for instance, as individual, purposive subjects—and one of the consequences of moving away from individuation is to move toward collectivization; “food” instead of the tilapia, green beans, and rice on your dinner plate, “forest” instead of the ivy that’s killing the hackberry tree in my backyard.²¹⁵ Bennett has a pair of goals that are somewhat at odds with each other in her treatment of food: on the one hand, she wants to conjure the material vitality that we share with food, such that our consumption practices might change for the better. On the other hand, she wants to maintain the primary focus of the book in which this argument is but one chapter, a focus on the activity or actancy of material things as distinct from living things. While the latter goal may encourage de-individuation, the former goal would benefit from an additional attentiveness to the living creatures, animal and especially plant, whose body parts make up the vast majority of human food, as well as allowing for at least a passing glance at the ways that those same other creatures engage their own food.

This is not to suggest that Bennett herself should have done things differently in this particular work, but rather to demonstrate some ways that Bennett’s interest in the material vitality we share with our food might be opened up in new directions by a consideration of botanicity. It is without question that we are so deeply entangled within an ecosystem with plants from all over the world that “deep ecological entanglement” is an understatement. Far more than animals, plants and plant body parts are constitutive of the material reality of humans everywhere—look around and consider all the plants, including the dead, that currently surround you. Be sure to include not only wood and

²¹⁵ This is intended as a callback to the Introduction, in which Eduardo Kohn’s *How A Forest Thinks* was demonstrated to ignore the plants that live in and largely comprise its titular forest.

paper, but also textiles, commercial dyes, hair- and skin-care products, and, of course, food. If we can bring Bennett's shared material vitality into our concept of plants, then we "could animate a more ecologically sustainable public"²¹⁶ on a far greater scale than our eating habits.

Environmental Rhetoric

It may seem unnecessary to make a case that plants should be included in environmental or ecological rhetoric. Plants are a huge part of the very picture of "the environment" that most people hold; there is a reason we call it "going green," after all. This may be because green spaces—woods especially, but also meadows, prairies, and even city parks—are usually what people have in mind when they imagine themselves "getting back to nature." In some ways, plants *are* nature in our minds; in the midst of a forest, we do not think of ourselves as in the midst of a bunch of creatures the way we might, say, in the midst of a herd of sheep. For humans, trees are *setting* in a way that sheep are not. They are environment both in the sense of the environmentalism movement and in the sense of surroundings for us to be in. Plants can be a useful collaborator for environmental and/or ecological theory that seeks to shift our thinking about the environment from a resource-centered concept to a relationship-centered one, or rather to shift from thinking the environment as a hierarchy with humans at the top to a network within which we have a responsibility of care and contribution.

Daniel A. Cryer's "Withdrawal without Retreat: Responsible Conservation in a Doomed Age"²¹⁷ takes up Thomas Rickert's and Nathaniel Rivers's notions of

²¹⁶ Bennett, p. 51.

²¹⁷ Cryer, Daniel A. "Withdrawal without Retreat: Responsible Conservation in a Doomed Age." *Rhetoric Society Quarterly*. Published online 22 March 2018, pp. 1-20.

withdrawal and Rivers's notion of *deep ambivalence* in order to develop an environmental rhetoric that can more directly work in partnership with science and particularly with on-the-ground conservationists. The essay takes to task those who critique conservationists and environmental discourse, instead proposing that environmental ethics should be building partnerships with them. It further argues that anthropocentrism must be embraced, partly on the grounds that human intervention got the environment into its current predicament and we therefore have a responsibility to intervene on its behalf, but primarily on the grounds that we are the only ones who *can* respond to the crisis, a claim that Cryer develops out of Diane Davis's concept of *response-ability*: "[O]wning up to anthropocentrism is, I believe, a crucial component of a human/nonhuman rhetoric, for *response-ability can never be reciprocal*. The obligation to respond will always be on humans and never on nonhumans. This one-way responsibility is the ineradicable "bold line" between us."²¹⁸ Like Cryer, I believe that we must own up to anthropocentrism; hence, for example, my defense of anthropomorphism. However, while Cryer locates the necessity of owning up to anthropocentrism in the nonreciprocity of Davis's response-ability—a nonreciprocity that Davis herself pointedly rejects and indeed is mystified by²¹⁹—the reason, for me, that anthropocentrism must remain an acknowledged part of what we do is quite simply that it is a part of what we do, and therefore must be acknowledged.

²¹⁸ *Ibid.*, p. 9. Original emphasis.

²¹⁹ Davis, Diane. "P.S. on Humanism." *Inessential Solidarity: Rhetoric and Foreigner Relations*, U of Pittsburgh P, 2010. See in particular pages 151-155: "The sacrificial readiness that breaks with "pure being" is attributable neither to practical reason nor to "pure reason," as Kant would have it, but to a responsibility prior to freedom that any idiot would have in spades—but that for some reason (it's still not clear why) not a single nonhuman animal would have *at all* (151, original emphasis)," "Let me say that I'm not convinced that the experience of the rhetorical imperative (*as an imperative*) is unique to human creatures" (154, original emphasis).

I want to return, instead, to the first grounding mentioned above in Cryer's work, the grounding that Cryer frames as more peripheral: that human intervention in thoroughly tied up with the current state of the environment, such that we have a responsibility to continue intervening on its behalf. Coupled with the call to bridge the gap between theory and those who have similar concerns but operate outside the theoretical discipline, this "we're-all-in-it-together" approach can be enriched and broadened by including plants in the "we." This is not a call for plant rights, though the impulse behind such arguments does indicate a similar push for inclusion. Rather, making plants part of the "we" means considering how our own needs and desires might bump up against theirs. As we have already pointed out, plants are already intimately involved with our concept of the environment, yet both plants and "the environment" share a tendency to become objectified. Reconceptualizing plants as creatures can contribute to the work already being done by animal conservationists to produce a public understanding of ecological environmentalism as a form of caring for living things rather than conserving resources.

Plants also offer a model for shifting the value systems that have contributed to our treatment of the environment as our own personal resource-box. Nathan Stormer and Bridie McGreavy detail a few of these shifts in "Thinking Ecologically about Rhetoric's Ontology,"²²⁰ which they describe as "three interrelated transitions from agency to capacity, violence to vulnerability, and recalcitrance to resilience."²²¹ The authors go on to explain:

²²⁰ Stormer, Nathan and Bridie McGreavy. "Thinking Ecologically About Rhetoric's Ontology: Capacity, Vulnerability, and Resilience." *Philosophy and Rhetoric*, vol. 50, no. 1, 2017, pp. 1-25.

²²¹ *Ibid.*, p. 3.

The first transition defines capacity more fully in contrast to symbol use as human agency. The second moves from thinking of rhetorical force as imposition, which is tied to violence, to a distributed sense of capacity derived from mutual vulnerabilities between entities. The third suggests that the persistence of rhetorical capacities stems from systemic adaptability and sustainability (resilience), rather than individuated abilities to resist (recalcitrance).²²²

If we were inventing a figure for the set of values described above—a body with capacities rather than symbolic agency, a body whose relationships with others is based in vulnerability more than in violence, and whose power or force takes the form of resilience rather than resistance—our figure would look very much like a plant.²²³

Though scholarship within animal studies and object studies has done significant work toward decoupling agency from linguistic ability, Stormer and McGreavy remind us that there is still work to do with regard to decoupling *rhetorical* agency from language. *Rhetoric and Plants* has attempted to do so by emphasizing the persuasive and communicative force of the capacities plants have—without anything that we might recognize as even akin to language, plants both respond and call for response. If rhetorical agency is aligned with symbol use, then we could not say with any certainty that plants have rhetorical agency. They do, however, have rhetorical capacity, in Stormer and McGreavy's terminology, and as such we humans have a responsibility to recognize an affinity with our own rhetorical capacity.

Pedagogy

²²² *Ibid.*, p. 3-4.

²²³ In fact, taking up plants as a potential figure for rhetoric may offer a powerful tool for intervening in a truly depressing current political climate that champions domination, imposition, and muscularity.

Finally, I'd like to gesture toward some of the ways that bringing plants into the rhetorical discussion can contribute to pedagogy, especially but not only composition pedagogy. As noted in Chapter 2, our compositional idiom is overflowing with ambulocentrism, the tendency to speak in terms of going elsewhere. Ironically, however, the more we have begun to pay attention to the embodied nature of writing, the more we have found ourselves seeking alternatives to this mammalian-body-centric idiom and wondering what else our bodies and our writing can do.

For example, Rita Irwin's "Facing Oneself: An Embodied Pedagogy"²²⁴ suggests that it is of the utmost importance to find stillness in order to find self-awareness. Irwin is approaching pedagogy within the context of teaching children, and it shows in her concerns. For instance, while Irwin laments that "children in today's classrooms have virtually no time to simply...learn to be still,"²²⁵ those of us who teach college freshmen might be much more concerned with how to *animate* our overworked, underslept students. Nevertheless, the problem that Irwin is addressing is broadly applicable to all forms of teaching in contemporary American education: how to make sure that our pedagogy does not devolve into the straightforward conveyance of information. For Irwin, solving this problem means "facing oneself," becoming "awake" or self-aware, remembering that you have and are a body and that this remembering allows you to be fully present. Irwin emphatically locates this process in stillness:

It is in stillness that we allow ourselves to face ourselves. It is in stillness that it becomes possible to appreciate the sounds we have taken for granted in new

²²⁴ Irwin, Rita L. "Facing Oneself: An Embodied Pedagogy." *Arts and Learning Research*, vol. 16, no. 1, 1999-2000, pp. 82-86.

²²⁵ *Ibid.*, p. 83.

ways. It is in stillness that we can envision new ways of being in relationship with others. It is in stillness that we can begin to understand that in any pedagogical moment, it is an openness to complexity that allows us to enter into the experiences of our students. At that moment we are experiencing the beginnings of an embodied pedagogy.²²⁶

It is important to note that Irwin's stillness is significant precisely because of its contrast to the activity or "busyness"²²⁷ of teachers' everyday lives, such that plant stillness does not function as a figure for her embodied pedagogy. Plant stillness, or rather sessility, is rather an addendum, a new way of being in relationship with others in addition to Irwin's becoming-still, an alternative stillness that is based in rooting rather than halting.

Irwin's is a pedagogy of animation, of how to inspire or produce engagement. Karen Kopelson's "Rhetoric on the Edge of Cunning"²²⁸ takes up quite a different pedagogical problem: how to overcome student resistance or, in other words, how to overcome an animation that actively moves *away*. Specifically, Kopelson contends that student resistance is often forcefully encountered by teachers whose visible identity markers are read by students as indicating a politics they want to resist; "the teacher-subject who is immediately read by students as belonging to any of the marginalized constituencies"²²⁹ such as women, people of color, and people of non-normative sexuality or gender. Kopelson argues for a cunning inhabitation of the neutrality that students expect from a classroom but not from a "minority" body, in order to slide through that

²²⁶ *Ibid.*, p. 84.

²²⁷ *Ibid.*, p. 83.

²²⁸ Kopelson, Karen. "Rhetoric on the Edge of Cunning; Or, The Performance of Neutrality (Re)Considered As a Composition Pedagogy for Student Resistance." *College Composition and Communication*, vol. 55, no. 1, 2003, pp. 115-146.

²²⁹ *Ibid.*, p. 118.

resistance. In short, Kopelson argues that the manipulation of students inherent in such an artifice does not, after all, run counter to the principles of critical rhetorical theory, but rather embraces the principles of performative ethos, situated flexibility, and the constructedness of identity that critical theory has developed and embraced. At bottom, inhabiting pedagogical neutrality is a powerful method of persuading students to come *toward*.

Plants have something to add to this analysis, since they are often engaged in persuading-to-come-toward. Plants persuade most visibly to us when they are persuading pollinators to approach. Though plants are rarely attempting to overcome *resistance*, they are often attempting to overcome *dismissal*, not a pushback but an absence of approach, which is in fact the form of student “resistance” most often depicted in Kopelson’s piece. Plants usually accomplish this overcoming of the absence of approach by exposure of the self in the form of flowers. Not to put too fine a point on it, the parts of plants that pollinators pay the most attention to, the parts that we ourselves tend to pay the most attention to, the parts that we notice and take away and decorate our lives with, are their exposed genitals. As human creatures, the very parts of ourselves that we go to great lengths to keep hidden, plants expose to the world. As human teachers, the parts of ourselves that we go to great lengths to keep hidden—our manipulations of students—may be something that we should consider exposing.

In other words, what plants can add to Kopelson’s pedagogy of artifice is *exposure of the artifice*. In 2018, our students have much more information at their fingertips than they did when “Rhetoric on the Edge of Cunning” was published in 2003, including information about educational practices and political ideologies; many of them

see right through every one of our artifices, if only because they are aware that teaching is very much a game of artifices. Teachers may all, to a greater or lesser extent, be Bugs Bunnys, but our students are not Elmer Fudds. In my experience, students are more willing to play the game, to approach and join in my “antics,” if I do not try to hide that antics are what I am doing. For instance, I may spend most of an entire class period coaxing my students to slowly and methodically improve the conclusion paragraph of a piece of student writing, only to close the class by announcing that this was all a trick question: that although their suggestions have made this conclusion better than it was before, the *best* way to improve this conclusion is to just delete it. The crucial move, though, is this: to then explain to them that asking them this trick question is an efficient method for improving their local editing skills while also improving their global eye. This exposure of the teacherly artifice acknowledges that students know about and understand such artifices, rather than allowing students to think that *I* think they have been successfully duped (a recipe for resistance if I’ve ever heard one).

This level of transparency, of course, may not work for everyone at every place in every moment, just as Kopelson’s inhabitation of neutrality may not work for everyone at every place in every moment; rather, the botanic pedagogy of exposure is yet another performance available to be inhabited. And we must keep in mind, too, that it is only one possible botanic pedagogy, since full exposure does not describe every form of plant persuasion. Some plants, like fly orchids, are deceitful through and through, while some, like pitcher plants, are violent and coercive. What they tend to share in common across all of these strategies, though, is the very thing that teachers, and perhaps particularly the teachers of marginalized identity specified by Kopelson, so often find themselves at a

loss over: how do I get my students to want to move toward *me*? There is much we could learn from plants, the reigning specialists of this kind of persuasion.

One Last Story

A few years ago I was up in New Jersey visiting my partner's family, and during the visit my mother-in-law treated me to a local woods tour. The tour was conducted by an ethnobotanist named Marc who traveled about doing local tours like these, the goal of which was to introduce people to some of the amazing plants that live in their area. Marc began the tour by asking us to sing a song with him, a traditional folk song whose tribal origin I unfortunately failed to write down, which was all about the circle of life and the interconnectedness of all beings in the world, including us.²³⁰ We then commenced a fascinating hike that covered maybe a half-mile square, learning about the edibility and medicinal properties of white pine, maple, and cattail, as well as Marc's suggestion for dealing with invasive species like the barberry, which is to put them to use.²³¹ Some of the other tour-goers were clearly there because they were interested in locavorism, while others, like me, were simply along for an interesting ride.

After the tour was over, my mother-in-law and I were chatting with Marc, and she mentioned to him that I was working on a dissertation about plants. Like many, Marc assumed that the plants-rhetoric connection I wanted to make was located in non-Western or pre-industrial stories or myths about plants. When I explained that, in fact, I directly focus on the privileged narrative, that of Western science, and offered the debate over "plant neurobiology" as an example, he responded in a way that, in hindsight, I should

²³⁰ Let me take a moment here to say: forgive me, Marc, for not singing along. I have stage fright.

²³¹ If I remember correctly, the barberry in particular can be used to make yellow dye, and Marc was invested in an attempt to turn invasive barberry into the default source, a solution that strikes me as simply brilliant.

have seen coming: “Hmm, I guess I can see what they’re trying to do with that metaphor. But you know plants don’t have neurons, right?”

I tell this story in closing because it so perfectly captures the two poles of thinking that my project has often been presumed to fit into. Marc is both a scientist and (I use the term with great affection) a hippie. He is capable of inhabiting, respecting, and identifying with both a scientific knowledge of plants and a folk knowledge of plants, such that his ethnobotany tours begin with a reminder of the intuitive wisdom of the earth and, at least when I was present, end with a Science-y insistence on the truth of scientific categories. These two seemingly disparate ways of thinking can co-habit one person for the same reason that this same person has difficulty thinking beyond either of them: they are both treated as knowledges. This dissertation has not attempted to produce a new *knowledge* of plants, has not considered the conveyance of information to be its primary goal or even its primary method. Rather, *Rhetoric and Plants* has sought to produce a new *perspective* on plants, new ways of thinking and talking about plants that can open up and cultivate new ways of thinking and talking about rhetoric.

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