

Free Flora: Developing a Map of Autonomy for Plant Life

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Abstract: This essay examines claims of autonomy in the environmental ethics literature which focus on plant life. I argue for a taxonomy of autonomy that organizes accounts into Robust, Relational, Minimal, and Paper-Thin views. This includes a discussion of moral considerability implicit in the Robust and Relational accounts and absent from Minimal and Paper-Thin accounts. This organization of views on autonomy is offered along with practical human-plant relationships in the cultivation of bonsai, the propagation of heirloom tomatoes, and the appreciation of sequoia trees, which illuminate the tension in between human intervention and plant autonomy.

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Introduction:

The relationship between humans and plants is an important moral issue. Not only do humans regularly consume plant life for sustenance, we use plants for managing air quality and temperature control. We consume plants for medicinal purposes. We use plants for both aesthetic and cultural meaning and communication. But are plants more than mere resources in the background of human and other animal life? Some human practices suggest a cultural valuation of plants as living material for whatever use we deem desirable – even if this includes ripping up or destroying plants out of boredom. But some environmental ethicists take aim at these practices and reject a purely instrumental valuing of nature. This paper examines claims of oppression of plant life by humans in terms of plant autonomy. I briefly motivate the problem by examining ecofeminist claims that humans dominate and oppress nature. Extending this analysis to plant life, I argue that there must be something about the object of oppression (i.e., the thing being oppressed) that makes sense of why this domination matters morally. One option is to attribute autonomy to the object of oppression. In this essay, I provide a taxonomy of positions on the autonomy of plant life and offer an analysis through practical examples of human-plant relationships. I argue that if autonomy is granted to plant life, there are practical ethical ramifications for those relationships.

Val Plumwood, Karen J. Warren, Vandana Shiva, and other ecofeminists claim that the human-nature relationship is often oppressive. Each specific argument targets a different part of the structure in the human-nature relationship to identify the root of the claim about oppression. Plumwood, for example, examines the oppressive nature of value dichotomies.¹ In presenting

¹ Val Plumwood, *Feminism and the Mastery of Nature* (New York: Routledge, 1993) and “Androcentricism and Anthropocentrism: Parallels and Politics,” *Ethics and the Environment* 1, no. 2 (1996): 119-152.

parts of the world as separate and differently valued, the emphasis is on otherness and value differentiation.² On the face of it, separating women from men and nature from culture may not seem suspect. But these dichotomies map on to subtle (and not so subtle) value claims between the two sides of the dichotomies. Culture, for example, has a rich legacy in European philosophy as being higher and better than nature. Men have been associated with reason and autonomy, over and above women associated with emotion and bodily determinism.³ By keeping these dichotomies, we are re-asserting these value differentiations, Plumwood argues. And this does not allow for a meaningful re-structuring of the human valuation of nature.

Karen J. Warren takes an alternative approach – to look at the logical structure of arguments made in favor of the domination of women and nature.⁴ Misogynist and patriarchal arguments justifying the domination, and by extension, oppression, of women rely on a type of “might makes right” mentality.⁵ The defender of this view might claim that men are physically stronger than women. Because they are physically stronger, they are entitled to dominate the weaker. So men can rightly dominate women. Alternative characteristics could be substituted for physical strength. Reason and rationality are also invoked as capabilities that men allegedly have in spades and women are deficient in.⁶ This difference is used to justify the domination of one over the other. Similarly, humans are juxtaposed with nature. Humans qualify as moral agents, so they are able to take moral responsibility for their actions.⁷ Perhaps this moral agency makes humans stand over and above nature, justifying their position of domination over nature. Or,

² Plumwood, *Feminism and the Mastery of Nature*, 43.

³ *Ibid.*, 31-2.

⁴ Karen J. Warren, “The Power and the Promise of Ecological Feminism,” *Environmental Ethics* 12, no. 2 (1990): 125-146.

⁵ *Ibid.*, 129-130.

⁶ *Ibid.*, 131.

⁷ *Ibid.*, 129.

perhaps humans are the most intellectually capable type of living thing on the planet. This intelligence might offer justification for the use and domination of everything else.

Some critics might push back against these claims of oppression for a variety of reasons. One complaint that could be lodged against ecofeminists by other feminist theorists is that ecofeminist analysis appears to divorce itself from human history and intellectual legacies, seemingly emerging from a void. For example, why engage first with ecofeminist theory of oppression, if indigenous theories handle similar questions and have historical priority. Ecofeminism might have its own colonial and oppressive position within the intellectual landscape. In not acknowledging their own situatedness in intellectual institutions and practices, critics argue that ecofeminist theory either (relatively) blindly appropriates portions of indigenous philosophy, or ignores it entirely. It is important to note that ecofeminism is not the only contemporary philosophical sub-field that participates in such appropriation. But, given the underlying moral aims of feminist philosophy in general that seeks to understand hegemonic gender power and oppression, perhaps ecofeminism has more of a stake in making sure that this theory avoids participating in and perpetuating such practices. The internal coherence of feminist reflexive criticism might demand it.

Another difficult issue within the context of discussing the oppression and domination of nature is the collision between feminist philosophy in general and intersectionality. In simply extending a framework of oppression from a human-centered context to the community of other animals, or to nature at large, a theorist might not only make the term meaningless by over extension and misuse,⁸ but could also miss out on the factors that make oppression in various human contexts meaningfully distinct from oppression of other animals and nature.

⁸ Marilyn Frye, "Oppression," *The Feminist Philosophy Reader*, ed. Alison Baily and Chris Cuomo, (New York: McGraw Hill Higher Education, 2008), 41-48.

Domination seems to be present in some human-plant relationships – but does this domination translate into oppression? This question creates the background of this project. Human-plant relations can be (I would argue, often are) fraught with serious ethical problems. But what is it about plants that make these relationships matter morally speaking? Instead of looking solely at the moral agency (and responsibility) of some human beings or the internal structure of oppression itself, I want to examine the characteristics and capabilities of plants that make them such an entity that human relationships with them matter morally.

A fruitful way of entering this examination is through the analytic question of oppression. Even if this examination shows that oppression language might not be the best way of examining the wrong-making features in some human-plant relationships, this starting point can illuminate the capacities and capabilities that make plants something worth considering morally.

This essay takes a deep dive into the capabilities of plants. It begins by examining autonomy and its relation to moral considerability in plants. In determining the wrong-making feature of dominating a plant, perhaps the undermining of the plant's "freedom" or self-government and self-determination is such a feature. I will discuss the array of views on plant autonomy and evaluate whether or not these views are able to support a type of moral considerability. Autonomy offers a novel way of thinking about plant activity and capabilities. In the close of the essay, I argue that whether autonomy exists for plants depends on which capabilities you are willing to grant to plant life. And even if plant life has the relevant capabilities for a weak form of autonomy, it is unclear that this is the best route to take for grounding the moral considerability of plant life.

Agency and Autonomy:

Agency and autonomy are closely related concepts in the Western philosophical world. Both have different meanings depending on the philosophical context in which they appear. Agency, most basically, is related to action, while autonomy is related to choice. Agency is a capacity that a given entity has if it can act. And autonomy is the capacity that an entity has if it can choose its own direction. Action is historically related to some of the same cognitive capacities underlying autonomy. Both have anthropocentric roots, in contemporary western philosophy. Humans and sufficiently human-like individuals can be agents and autonomous.

Agency and autonomy comprise a possible path to understanding the wrong of oppression – and how to make sense of ecofeminist claims that humans oppress nature. In particular, this examination looks at plants, but the analysis provided here could extend beyond plant life to other types of ecological and artificial entities. What characteristics must the object have in order to make sense of its being oppressed? One response might be that the wrong built into oppressing something is that the domination of the object matters to it in some way. There is something about the object of oppression that the undermining of its non-dominated existence matters to it. There are accounts of oppression that focus more on the subject of oppression, i.e., the oppressor. But for this analysis, I am interested in investigating the identity of the oppressed, and how domination of the oppressed individual might matter to it.

Tom Regan introduces, within his zoocentric account of rights, the distinction between moral agents and moral patients.⁹ He argues that moral agents are those who have moral understanding and are able to bear moral responsibility for their actions. For example, many humans would count as moral agents. This is contrasted with moral patients. Moral patients have

⁹ Tom Regan, "The Case for Animal Rights," in *The Animal Ethics Reader, 2nd Edition*, ed. Susan J Armstrong and Richard G Botzler (New York: Routledge, 2008: 19-25.)

moral considerability and can be meaningfully affected by moral agents. For example, my dog is merely a moral patient, whereas I am a moral patient and agent. He can be wronged by my harmful actions.

While there is some interest in determining whether nature, or natural entities, are moral agents, I would instead like to focus on them as moral patients. How can natural entities, or in the case of this paper, plants, be understood as moral patients? Regan argues that subjects-of-a-life are moral patients, because the way the world goes for subjects-of-a-life matters to them. He does not include plants in his account, though an argument could be made, depending on one's beliefs about the capacities of plants, that they could qualify as subjects-of-a-life. Josephine Donovan argues for such an extension of this subject-of-a-life criteria to bacteria and other living things.¹⁰

This will not be my approach, however. In understanding why things might matter to plants, I want to examine whether or not they have autonomy. Why would domination matter, if not in part, because one's choice and freedom to develop as one wills matters? Already, I am sure, the skeptic will be wary of such suspect language: 'choice,' 'freedom,' and 'will' are not words that some would attribute to plants. As Matthew Hall clearly documents, the more recent history of philosophical development in the Western world repeatedly cordons off plants from other forms of life.¹¹ Plants do not have consciousness, sentience, or intention. It is worth noting that until recently, other animals were also denied consciousness and sentience by the broader scientific community.¹² Whether or not other animals are agents, at least of the type that have

¹⁰ Josephine Donovan, "Participatory Epistemology, Sympathy, and Animal Ethics," in *Ecofeminism: Feminist Intersections with Other Animals and the Earth*, ed. Carol J. Adams and Lori Gruen, (New York: Bloomsbury, 2014): 75-90.

¹¹ Matthew Hall, *Plants as Persons: A Philosophical Botany* (Albany: State University of New York Press, 2011).

¹² *Ibid.*, 2.

some moral responsibility, is still highly contentious. Though autonomy is something more readily granted to other animals. I may not hold my dog responsible for his aggressive reaction towards a human who repeatedly does not respond to my dog's communication of agitation and submission. However, I might admit that he has some sense of choice or preference in his life. He might happily go for a walk or play tricks-for-treats, but, if given a choice, he has a preference that he can act on. He may choose one food over another, for whatever reason. He may choose one path or another as we hike. Developing communication with other animals, via the behavioral veterinary sciences, humans can gain greater clarity of what animals might want, and what they might prefer or choose, if given that opportunity. The constraints humans place on such domesticated animals may not enable the enactment of such autonomy, but that does not mean that such animals do not have the capacity for autonomy. They are simply being denied access to developing and acting on such autonomy. Extending autonomy, and perhaps, depending on one's framework, agency, to plants is an entirely different matter, however. Plants have been denied consciousness and intentionality for much longer in our current scientific climate. So how might we begin to think about plant autonomy? I offer a taxonomy as a way to make sense of variety of views.

Taxonomy of Plant Autonomy

I have identified at least four typologies within the taxonomy of plant life's autonomy: Robust, Relational, Minimal, and Paper Thin. Each category includes positions in the literature that either directly or implicitly support that corresponding view of autonomy.

The Robust

The robust account of plant autonomy proposes that types of autonomy that traditionally apply to humans and other animals, also apply to either individual entities in nature, or ecosystems as a whole. For example, they may attribute consciousness to nature and the capability of self-government on par with human-like entities. Under this view, nature (and/or individual natural entities like plants) may have the ability to choose actions or responses to the external world. These views require a type of panpsychism in nature. Most animal accounts of autonomy require social groups, basic consciousness, and minimal cognitive capacities.¹³ For these views to hold in the case of nature and nature's component entities, there must be robust consciousness there.

One example of this robust view is present in Val Plumwood's work.¹⁴ She argues that humans are on a spectrum with all other natural entities on Earth. While her particular account of autonomy (and agency, as she seems to couple them like other theorists) is far from fleshed out, putting the autonomy of nature on the same general scale as human autonomy suggests that both are of the same type, just different in degree. If this is the case, the particulars of autonomy might differ, but the substance is the same. So plant life is on the same autonomy spectrum with humans.

The Relational

The relational account of plant autonomy mirrors the robust account in that it, too, is rooted within the human and animal realm, but differs in its employment of specifically feminist tools within the tradition of feminist relational autonomy. One of the pivotal offerings from feminist relational autonomy is the distinction between constitutive and causal accounts of

¹³ See Reyes-Illg (2016), Bekoff (2007), and deWaal (2016).

¹⁴ See Val Plumwood, "Toward a Progressive Naturalism," in *Recognizing the Autonomy of Nature: Theory and Practice*, ed. Thomas Heyd (New York: Columbia University Press, 2005): 25-53.

autonomy (i) those which focus on the forces external to the subject that either inhibit or support the development and enactment of an entity's autonomy; and substantive autonomy (ii) supplies the contents of autonomy, or what is required for autonomy to exist within the entity.

These are valuable tools for teasing apart the context and content of autonomy. One existing view that seems to take a constitutive approach is Eric Katz. He admits avoiding the metaphysical foundations of his position, but views nature's autonomy as the force it exerts against human domination.¹⁵ Arguably related to Diana Meyer's account of autonomy competency,¹⁶ he is establishing limits to and forces against nature's autonomy, before addressing the substantive definition of nature's autonomy. It's unclear that Katz thinks we, as humans, can access nature's substantive autonomy or nature's identity in and of itself. Rather, we should seek to identify instances of human domination of nature and avoid such intrusions.

However, a major drawback for applying relational autonomy to plants is the stricter requirements it places on the attainment of autonomy. Many accounts of relational autonomy require not only an act of choice, but a reflective analysis of one's options and desires. The most useful portion of relational autonomy for thinking about plants is the focus on the structures that inhibit the production of autonomy, rather than the substantive accounts of autonomy.

Working from within the dominant scientific paradigm that correlates consciousness, and by extension, sentience, with neuro-biological features similar-enough to the human brain and neural network, how can an argument be made that plants make choices, have an awareness of options, or can act in any meaningful way?

¹⁵ Eric Katz, "The Liberation of Humanity and Nature," *Recognizing the Autonomy of Nature: Theory and Practice*, ed. Thomas Heyd (New York: Columbia University Press, 2005): 78-79.

¹⁶ Catriona Mackenzie and Natalie Stoljar, "Introduction," in *Relational Autonomy: Feminist Perspectives on Autonomy, Agency, and the Social Self*, ed. Catriona Mackenzie and Natalie Stoljar (New York: Oxford University Press, 2000): 17.

One option might be to accept a shift in paradigms. There are several alternative worldviews that accept other accounts of plant capabilities. Josephine Donovan, for example, argues for an extension of consciousness past animals based on an understanding of quantum physics¹⁷. Arne Johan Vetlesen argues that accepting a type of panpsychism is ultimately the best approach for Western Environmental Philosophy to take.¹⁸ In *Plants as Persons*, Matthew Hall carefully documents a variety of historical and contemporary religious traditions (Buddhism, Hinduism, Paganism, various Indigenous belief systems) that ascribe spiritual value or cognitive capacities to plant life.¹⁹ With such commitments, an account of plant agency and autonomy is more contiguous with anthropocentric and sentiocentric accounts of autonomy. These attitudes towards plant consciousness would best serve Robust and Relational views, but there are other types of autonomy in the taxonomy.

The Minimal

The third set of positions on autonomy is the minimal. For minimal autonomy, there is no requirement of consciousness, self-awareness, and/or selfhood. These are stripped away in favor of a more reduced version of autonomy. Keekok Lee, one of the subscribers of this view, writes: “It means no more and no less than the following: it simply is *what has come into existence, continues to exist, and finally, disintegrates/decays, thereby going out of existence, in principle, entirely independent of human volition or intentionality, of human control, manipulation, or intervention*. Its existence is independent not only of human kind but also of gods/supernatural

¹⁷ Josephine Donovan, “Participatory Epistemology, Sympathy, and Animal Ethics,” in *Ecofeminism: Feminist Intersections with Other Animals and the Earth*, ed. Carol J. Adams and Lori Gruen, (New York: Bloomsbury, 2014): 75-90.

¹⁸ Arne Johan Vetlesen, *The Denial of Nature: Environmental Philosophy in the Era of Global Capitalism*, (New York: Routledge, 2015.)

¹⁹ Matthew Hall, *Plants as Persons: A Philosophical Botany* (Albany: State University of New York Press, 2011).

entities. It is self-sustaining and self-generating.”²⁰ The goal-orientation of minimal autonomy can simply be procreation, or even less robust, mere existence. Also important in this position is the entity’s separated-ness from human action and volition – the entities that have minimal autonomy need not rely on any human activity – or divine, for that matter. The minimal view can easily account for both biotic and abiotic entities, the living and dying processes of biotic entities, and even the production and disintegration of abiotic entities.

Under this view, not only plants, but also individual rocks and whole ecosystems could have autonomy. This also includes more basic systems associated with scientific phenomena. For example, gravitational forces are phenomena that exist without the intervention or manipulation of humans or deities (depending on your particular underlying religious worldview.) Lee offers mountain ranges and plate tectonics as other natural processes that have autonomy.²¹

A difficulty with this view, however, might be the ability for it to carry the weight of moral considerability. How can one account for moral value by appealing to what looks like the mere existence of functioning individuals and systems? The impetus for this project originated in domination and oppression – making sense of how domination of plant life might matter to it. With minimal autonomy, it’s unclear that morality is salvageable with such a thin account.

The Paper Thin

The last view is the paper thin view of autonomy. This collection of positions, like the minimal view, does not require robust goal orientation, consciousness, or selfhood. It departs from the minimal view, however, in that it includes human-made and intervention-requiring things. For example, under this view, not only would an ecosystem have autonomy, you could

²⁰ Keekok Lee, “Is Nature Autonomous?” in *Recognizing the Autonomy of Nature: Theory and Practice*, ed. Thomas Heyd (New York: Columbia University Press, 2005): 59.

²¹ Ibid.

meaningfully speak of an autonomous car or other human-made machine. A car could be autonomous, though at its inception it might have required human design and might require human intervention to attach it to a power source. The car can function on its own, despite these interventions. This account proposes a very minimal self-sufficiency requirement in operation or existence.

Another example of this might be machines that are capable of self-replicating, self-sustaining, and self-generating. Humans (or other machines) might need to supply the materials needed for production, but beyond that, these machines are able to operate on their own. This view might also apply to certain forms of artificial intelligence, though that might depend more on the non-existence of consciousness. Assuming that AI is referring to non-conscious processes, it would be covered under the paper thin view.

In the paper-thin view, the distinction between artificial (human-made) and natural (non-dependent on human creation) is not handled as a meaningful distinction. It is an open question whether this distinction is necessary to maintain when discussing plant life – though the modification of some plant life and seeds might bring this distinction to the surface. While other theorists (e.g., Paul Taylor²²) hold completely different moral status for domestic and wild animals (giving preference to wild), if a paper thin view is defended, I doubt that the person holding this view would much care about the distinction. They might, alternatively, choose to hold the minimal view.

In both the minimal and paper thin camps, there is no claim of consciousness for entities or systems with autonomy. But can plants have autonomy without consciousness? There are plenty of accounts that claim as much. Heyd's edited volume *Recognizing the Autonomy of*

²² Paul W Taylor, *Respect for Nature: A Theory of Environmental Ethic*, (Oxford: Princeton University Press, 2011).

Nature offers a few accounts of non-Kantian autonomy. However, some of these accounts are likely too vacuous to support the weight of moral considerability. For example, Lee argues that nature can properly be understood as having autonomy, but so can most other natural systems, processes, biotic and abiotic. Such a thin account does not really provide reasons why these systems, for example gravity, matter in a moral sense. They might have some normative pull – that there is a trajectory for which they aim, and that they can function without human intervention. But this normativity seems a far cry from normativity bound up in moral concerns. The paper thin camp faces the same issues.

There are other ways to understand plant autonomy. By looking at other capacities that plants have, one might be able to craft an account of autonomy that does not rely on consciousness, but does make sense of the “choices” plants make. For example, sentience is just one capacity that personhood theorists, like Mary Anne Warren, use to distinguish moral persons from non-persons. Other capacities might include reasoning, self-motivated activity, communication, and the presence of self-concepts.²³ While Warren’s argument sides on the more robust and complicated side of the spectrum that these vague terms refer to, one might conceive of a more minimal way of interpreting these qualifications. For example, reasoning might include the type of biological problem solving that organisms make when responding to an environment. Self-motivated activity, if we overlook the requirement for a consciousness-centric concept of self, might include an entity’s growth and response to its environment. Self-concepts, like consciousness, might be out of the realm of possibility for plants. But if selfhood itself is a requirement, one could conceive of a minimal account of identity that includes a synchronically and diachronically unified entity that persists over time and is able to absorb information from

²³ Mary Anne Warren, “On the Moral and Legal Status of Abortion,” *The Monist* 57, no. 1 (1973): 43-61.

the environment and respond in kind. The entity, as something distinct from the environment, has a type of identity. This identity, aside from consciousness or self-concepts, might make the choices that the plant makes have value in and for that entity.

Now, let's look at specific cases to test the views of plant autonomy in the practical sphere.

Three Practical Human-Plant Relationships

These three practical cases illuminate the moral conflict ridden relationships that some human-plant interactions have. I will briefly sketch these conflicts as they occur within (a) the practice of cultivating bonsai plants, (b) growing heirloom tomatoes, and (c) interacting with wild sequoia trees.

Bonsai is an example of a plant that has high aesthetic value and constant, long ranging human intervention and modification. Bonsai is a very particular aesthetic and cultural practice. Bonsai, in particular, tend to be trees that, if left to their own devices, might well grow much larger and live very different lives. Common bonsai trees include ficus, juniper, Japanese maple, and Chinese elm, all of which can grow into full sized trees if allowed to grow without human intervention and with access to proper nourishment.²⁴ Bonsai, however, is not just an aesthetic object devoid of character or life: "The bonsai owner finds that his trees become part of the family; he has a tendency to gravitate toward them at any spare moment of the day, just to make sure that all is well. Each one has its moment of glory, when it is the favorite child."²⁵ This cultivation of a living entity within or outside of a bonsai artist's home can develop feelings of

²⁴ Kunio Kobayashi, *Bonsai*, (Tōkyō : Pai Intānashonaru, 2011): 19.

²⁵ Yuji Yoshimura and Giovanna M. Halford, *The Japanese Art of Miniature Trees and Landscapes: Their Creation, Care, and Enjoyment*, (Rutland, Vermont: Charles E. Tuttle Company, Inc., 1974): 20.

kinship and attachment. This isn't to say that the plants are her children, or that she considers them on an equal moral platform with human beings, but there is the development of a relationship there.

In viewing bonsai cultivation as a relationship, there are certain aesthetic and moral concerns that the bonsai cultivator must keep in mind. Bonsai cultivation includes concern for the individual tree's natural inclinations. In bonsai, the artist attempts to achieve a balance between the plant's natural appearance and the artist's intervention.

Bonsai are ordinary trees which, whether naturally or artificially dwarfed, have been trained in pots to grow into naturally beautiful shapes. It is important to bear this in mind, for the chief beauty of the bonsai is its form, and even when that form is fantastic it still must not be grotesque... Above all, the bonsai should never be trained into a shape that does not naturally become its species; it should remain a forest tree, seen through the wrong end of a telescope. This training is the antithesis of topiary work, which at one time was almost as great a passion in England as bonsai are in Japan. Bonsai art aims at creating artificially perfect trees, while topiary art aims at amazing by the ingenuity with which trees can be made to look like anything but themselves. Yet there is a similarity between the two, for without constant care the produces of neither would reach and retain perfection.²⁶

There is a requirement not only for the artist to know the specifics of a tree's environment of growth, but also an understanding of the tree's species and their natural growth in the wild (i.e., non-domestic) sphere. But whether this concern ultimately boils down to aesthetics or morality is an open question.

When considering the discussion above, the bonsai tree poses significant questions involving domination and autonomy. If robust autonomy is granted to a bonsai tree, it may be greatly undermined by the constant intervention of the bonsai artist. The unmodified tree might desire to grow into a large, healthy, "normal" tree – rather than be tended constantly by an artist

²⁶ Ibid., 21.

and kept in an artificially restrained size. Quickly you can see that understanding whether plants have robust or relational autonomy could require a form of communication. Without being able to access the tree's desires or understand if it has preferences, it is hard to determine not only what it might choose, but *that* it might choose. Minimal and paper-thin views needn't address such concerns. But also, they may not be able to give an answer for why or how the practice of bonsai matters to the plant.

Another brief practical example is that of heirloom tomatoes. Heirloom tomatoes are a beautiful type of fruit popular in the United States. Tomatoes have a long history in human consumption. While non-GMO heirloom tomatoes side-step the issue of human domination via genetic engineering, they still are cultivated over generations to produce fruit that caters to human gustatory and nutritional preferences and needs.

The case of food crops, like heirloom tomatoes, offer a particularly use-oriented human-plant relationship. The gardener's concern over health of the tomato plant often times has little to do with the health of the plant in its own right, but in relation to the yield of fruit that can be used and consumed by humans. The cultivation of any crop presents a case of human intervention and possible undermining of a plant's self-direction, whether it be conscious or unconscious, robust or paper thin. This is where moral considerability is key for understanding domination of plants, like food crops. If, using the case of autonomy offered here, a too-thin account of autonomy is accepted in the case of my grandmother's heirloom tomato plants, her domination of them (via cultivation, moving the plants according to her preferences, giving a plant away as a gift, thinning out the garden plot by destroying half of the heirloom tomato plants, etc.), while undermining their autonomy, may have no moral significance. So what if the heirloom tomato plant can exist without human intervention or control (as in the minimal and paper thin

accounts)? That intervention, in disturbing such systems, cycles, or activities, in strict terms of honoring or disrupting autonomy, can't explain why or that dominating the plant is wrong.

As in the case of domesticated animals, domesticated plants might have been so interfered with by humans that they no longer can survive without human intervention. If autonomy requires self-generation and self-sustenance – as in the minimal view - it is unclear that the domesticated plant is indeed autonomous.

A final brief example is the case of the sequoia tree. These are giant trees that naturally occur in the northwestern United States. They are famous for their size, and they inspire many tourists to visit them throughout the year. These undomesticated trees might appear to be wholly outside of human intervention, and are the most likely to be considered autonomous out of the three. Laying aside the rare examples of people drilling through a tree to drive cars through it, sequoias have been historically protected by the United States government.

But even in this case, there might be conflicts between human actions and the autonomy of sequoia trees. As with other living beings, anthropogenic climate change might reduce, if not completely remove, a plant's ability to self-direct itself to survive. In limited choices and greater force exerted on the entity by its environment, it may not be able to adjust to a changing climate. Especially in the case of plants – and even more so, perhaps, in the case of slow growth and long life-span plants like trees – climate change might undermine any chance of the entity surviving and reproducing.

In each of these cases, the human-plant relationship is complicated, but the potential for conflict between the plant's autonomy and human action is apparent. This does not mean, like Katz and others claim, that humans are required to avoid all interaction with autonomous plants. But rather, it means that if we do indeed grant plants autonomy, it might require us to change our

orientation toward them. In the case of robust and relational autonomy, we might be required to consider moral considerability along with the plant's autonomy. In the case of minimal and paper-thin accounts of autonomy, clear moral considerability may not be built into that particular capability of a plant. So it might be worth investigating further what other capabilities or capacities the plant may have that could qualify it for moral considerability.

Conclusion:

The taxonomy illuminates the choices available to a theorist who might want to ascribe autonomy to plant life. Autonomy is useful because it builds an ethical value into the freedom that entities with autonomy might have. Depending on the capabilities one grants to plants, there are more and less robust accounts of autonomy that have moral bearing on what a human's responsibility towards a given plant might be.

While this essay does not provide a conclusive argument for which position on plant autonomy should be accepted, it raises important issues for each account. There are bullets that each must bite. Too thin an account may be more acceptable to a contemporary Western audience, but may not be able to bear the weight of moral considerability. Too robust of an account might claim human-like capacities for plants that some contemporary thinkers might find too regressive to accept. The robust accounts of autonomy may explain the wrong of human domination over plants, while the thin may not be able to explain why the undermining of living or non-living systems has moral import.

Beyond this, though, the analysis above provides more fruitful veins of inquiry, both within and outside of the concept of autonomy. In examining human-plant relationships, the capacities of plants might help make sense of how we should treat and interact with them.

This fundamental shift of orientation based on capacities, autonomy or otherwise, will help reflect on and amend some of our practices that involve plants.

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