

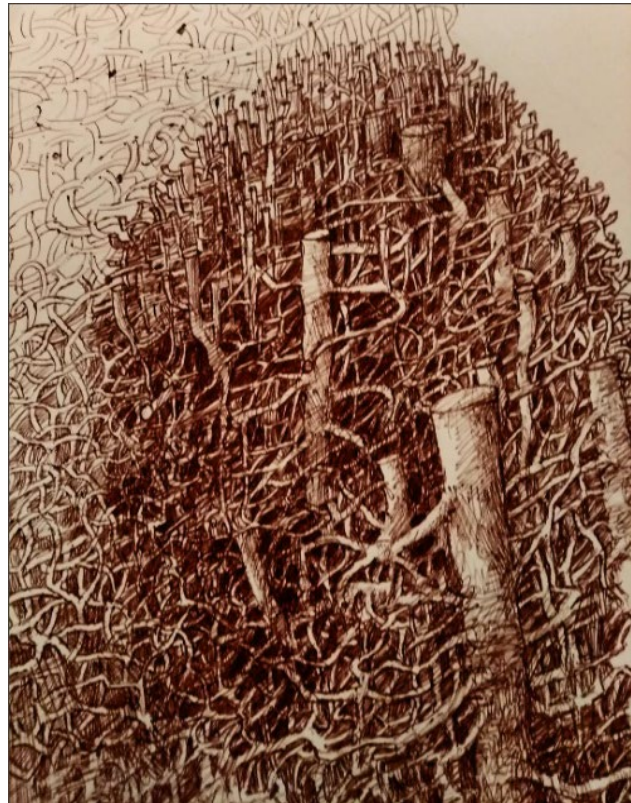
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***ETHOLOGICAL ETHICS OF VEGETAL LIFE.  
PERMACULTURE AS A PRACTICE TOWARDS MUTUAL FLOURISHING***

1. Introduction 2. Ethics as an ethological experiment 3. Non-unitary, non-hierarchical Life of plants 4. Permaculture as a practice of ethological ethics 5. Conclusion

**ABSTRACT: ETHOLOGICAL ETHICS OF VEGETAL LIFE.  
PERMACULTURE AS A PRACTICE TOWARDS MUTUAL  
FLOURISHING**

*This article investigates vegetal life from the perspective of ethological ethics and proposes Permaculture as a practice for cultivating alternative human-plant relationships based on this ethical framework. First, I introduce the concept of Gilles Deleuze's ethological ethics and its relevance to plants. The distinctive mode through which plants organize their existence and relationships with their surroundings sharply contrasts with the majority of Western metaphysical tradition, which conceptualizes the world as a hierarchically ordered system of self-contained individuals, with humans occupying the apex. Understanding plants from the perspective of ethological ethics is helpful not only in distancing ourselves from exploitative relationships with plants, which have thus far resulted in disastrous environmental consequences, but also in overcoming the anthropocentric mindset deeply rooted in some ecological discourses that position humans as the sole agents of environmental stewardship. I posit that the non-unitary, interdependent mode of existence manifested by plants elucidates the necessity for a different human-plant relationship. Lastly, I examine Permaculture as a practice toward forming this alternative relationship by attuning to and assimilating with plant modes of being.*



**1. Introduction**

In late April 2024, just after the summer semester had started, students of the Institute for Applied Theater Studies at the University of Giessen were bustling around a small patch of garden, trying to keep up with the intimidating pace of spring blooming. The garden seminar, entitled “Garden of Earthly

Delights”<sup>1</sup>, aimed to revive the Institute garden, which had been abandoned after its creation by former graduates during the COVID-19 pandemic, when all theatres closed down and students had to find other forms of activity. Returning to the garden after it had grown into what seemed like an anarchic jungle in just three years, we busied ourselves uprooting grass, digging earth, creating vegetable beds, sowing seeds, and planting herbs – all in the hope of “bringing back order” and making the garden more “fruitful”.

A few weeks passed, and strange patterns began to appear in all corners of the garden. Almost nothing we did seemed “successful”: the herbs dried up, the seeds never sprouted, and the very few that did were immediately devoured by snails and blackbirds. This is not to say that the garden turned barren upon our arrival. It was lush with the green of new buds and the dazzling blossoms of spring flowers –just not the ones we had planted. The long-standing inhabitants of the garden thrived alongside our “failures”, spreading to every corner of the space, blooming in profusion, and covering the beds with their vibrant colors. There were also flourishing newcomers – but only those that had “come by themselves”, whose paths fortuitously coincided with the garden. Our seminar always began with baffling observations: “Did we plant that?” “No... It must have come by itself”.

How do these seemingly sedentary creatures arrive in the garden by themselves? What causes some seeds to germinate while others remain dormant? Why do some plants thrive while others do not? How do we position ourselves within a system that appears to function effortlessly on its own? Evidently, the garden reveals that there is something we, as humans, do not know – but that plants seem to know very well. The immediate response to our

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<sup>1</sup> The seminar was titled after Hieronymus Bosch's triptych, which depicts a progression from the paradisiacal Garden of Eden to apocalyptic visions of hell. However, the painting does not present these scenes with a clear moral judgment of good and evil; rather, it portrays a multifaceted and often joyful coexistence of humans with the natural world.

failures in the garden might be to attribute them to a lack of botanical knowledge. However, in this paper, rather than following the habitual path of seeking to know more *about* plants, I am more interested in how these failures invite us to think *with* or *through* plants. In other words, I seek to interpret these failures as an invitation to delve deeper into the question of what it is that plants “know very well”. How do they understand and engage with the world? And how might we understand the ways in which they understand?

For centuries, the inherent zoocentrism embedded in the Western intellectual tradition led to the dismissal of plants as inferior beings – devoid of agency or intellectual capacity – especially in comparison to humans and animals. In recent decades, however, significant advances in scientific research on plant life have prompted a fundamental re-evaluation of plant ontology<sup>2</sup>. Despite these developments, much of the research continues to assess plant agency and intelligence using criteria suited to organisms with centralized systems, such as the brain, thereby perpetuating a zoocentric perspective on vegetal life<sup>3</sup>. Furthermore, ethical debates concerning our relationship with plants often remain informed by notions of their instrumental value, their proximity to humanity, or the projection of humanist and moralist frameworks onto plant life<sup>4</sup>.

This paper seeks to move away from these underlying

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<sup>2</sup> Literature that suggests a rethinking of vegetal intelligence and vegetal life includes, but is not limited to, the following: S. Mancuso, A. Viola, *Brilliant Green. The Surprising History and Science of Plant Intelligence*, Island Press, Washington 2015; A. Trewavas, *Plant Behaviour and Intelligence*, Oxford University Press, Oxford 2014; D. Chamovitz, *What a Plant Knows: A Field Guide to the Senses*, D&M Publishers, USA 2012.

<sup>3</sup> F. Comollo conducts a thorough examination of the zoocentric bias in the history of philosophical theories on vegetal life in F. Comollo, *A Foray into the Worlds of Plants and Fungi*, in «Biosemiotics», 17, 2, August 2024, pp. 469–85. For an extensive critique on the persistent zoocentrism in plant philosophy, see: S. Sandford, *Vegetal Sex: Philosophy of Plants*, Bloomsbury Academic, London 2023.

<sup>4</sup> A critical examination of attributing value on plants as well as a search for the intrinsic value in plants can be found in the following: F. Comollo, *Ethics of Plants: Interconnections between Biosemiotics and Critical Plant Studies*, in «Biosemiotics», May 16, 2025.

anthropocentric tenors in existing approaches by developing a discussion of ethics in relation to vegetal life from a more phytocentric perspective –one that begins by rethinking the ontology of plants. Given that substantial scientific research has already been conducted on vegetal life and plant intelligence, this essay does not aim to replicate those empirical findings. Rather, it undertakes a philosophical inquiry into the mode of plant existence and their relational dynamics with their surroundings. Gilles Deleuze’s ethological ethics provides a useful framework for this task, as it enables us to conceive of plants not as unitary organisms, but as microscopic assemblages that constantly engage in mutually empowering relations, sustaining their existence through these dynamic interactions. In this paper, I will explore how this concept enables an entry into a plant ontology that not only departs from the anthropocentrism entrenched in Western metaphysics but also offers a radical reconfiguration of ethical agency – one that recognizes ethical capacity as not exclusively human, but as something enacted by plants as well. This reorientation opens up a more horizontal plane of relationality between humans and plants. Lastly, I will examine how Permaculture, as an (agri)cultural movement, embodies this decentralized ethical agency as a core principle, fostering conditions for a mutually flourishing human-plant relationship.

## ***2. Ethics as an ethological experiment***

### ***2.1. Spinoza’s turn from morality to ethics***

Let us begin by examining how Gilles Deleuze’s conception of ethics unfolds through the philosophy of Baruch Spinoza and the theory on animal life of Jakob von Uexküll. Deleuze’s ethical framework is fundamentally rooted in Spinoza’s philosophy, which distinguishes ethics from morality. Whereas morality is grounded in a transcendent and hierarchical system that defines good and

evil through externally imposed norms, Spinoza's ethics is situated on a horizontal plane of immanence, where all beings exist equally as expressions of the same substance. Spinoza's monist ontology posits that all finite beings are expressions – or modes – of a single, infinite substance: God or Nature (*Deus, sive Natura*)<sup>5</sup>. Within this framework, all entities, human and nonhuman alike, exist equally under the same ontological order, thereby rejecting any notion of human exceptionalism or hierarchy among beings. In other words, Spinoza's monism offers a radically horizontal worldview, in which a stone and a sage, a pig and a philosopher, are equal in value<sup>6</sup>.

Central to this horizontal system is the concept of *conatus*, a notion that underpins what is often referred to as Spinoza's *conatus* doctrine: that «each thing, as far as it can by its own power, strives [*conatur*] to persevere in its being»<sup>7</sup>. In the proposition that follows, Spinoza goes on to claim that *conatus* is precisely the essence of a being: «The striving [*conatus*] by which each thing strives to persevere in its being is nothing but the actual essence of the thing»<sup>8</sup>. By establishing *conatus* as the essence of all finite beings, Spinoza suggests that beings are defined by their power, not by a generalized or fixed essence. The crucial point in Spinoza's ethics is that this power is equated with virtue, as the power of self-sustenance arises necessarily from the very nature of existence<sup>9</sup>. Therefore, acts

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<sup>5</sup> In Spinoza's philosophy, as an immanent cause that exists within in all beings in nature, God can no longer be distinguished from nature, leading to one of his most controversial expressions: «*Deus, sive Natura* (God, or Nature)» B. Spinoza, *A Spinoza Reader: The Ethics and Other Works*, trans. by E. Curley, Princeton University Press, Princeton 1994, p. 198.

<sup>6</sup> G. Deleuze, *Spinoza: the Velocities of Thought, Lecture 02*, University of Paris 8, Paris 16.12.1980, <https://deleuze.cla.purdue.edu/seminar/spinoza-velocities-thought/> (last accessed: 01.04.2025).

<sup>7</sup> Spinoza first introduces this notion in Proposition VI of Part 3 in *Ethics*. Edwin Curley translates the Latin word *conatur* as «to strive» and *conatus* as «striving» (B. Spinoza, *op. cit.*, p. 159). According to Curley, the *conatus* doctrine functions as a foundation for ethics because it guides us to plan our lives according to reason (B. Spinoza, *op. cit.*, p. xxxi).

<sup>8</sup> *Ibid.*, p. 159.

<sup>9</sup> *Ibid.*, p. 201.

that enhance one's power to preserve one's existence are considered virtuous. Virtue can no longer be applied universally in terms of good and evil – notions that pertain to morality – for what is toxic to one's endurance may be beneficial to another. Also, through the concept of *conatus* as the power all beings carry, ethics no longer remains a system governing human societies alone, but becomes one in which all entities enact in order to endure and flourish.

It might seem that Spinoza's justification of self-preservation as ethical behavior, and his identification of power with virtue, could easily be interpreted as a justification of the survival of the fittest or unbounded competition for scarce resources<sup>10</sup>. However, the pursuit of *conatus* becomes an ethical endeavor for Spinoza because he understands bodies<sup>11</sup> as necessarily composed of other, smaller bodies, which are themselves composites of yet other bodies. These composite bodies affect and are affected by infinitely many others in multiple ways. As Spinoza writes: «The human body is composed of great many individuals of different natures, each of which is highly composite. [...] The human body, to be preserved, requires a great many other bodies, by which it is, as it were, continually regenerated»<sup>12</sup>. If a body is understood as a composite of interdependent bodies, then the task of self-preservation within this indivisible, interrelated web can by no means be achieved in isolation. It is always a

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<sup>10</sup> While both Spinoza and Hobbes believe that the essence of a being is its power of action, they differ in their understanding of self-interest. For Hobbes, the scarcity of resources induces competition and conflict in the pursuit of self-interest. In contrast, for Spinoza, the guidance of reason—the knowledge of God/Nature, which he considers the highest good—enables one to pursue their own interest without harming others, because all bodies are composite of other bodies. With the right understanding of this interdependency, the pursuit of one's self-interest and the increase in one's power to act does not diminish the power of others; rather, it empowers them as well and leads to mutual flourishing. *Ibid.*, p. xxxii.

<sup>11</sup> Moreover, in his radical rejection of the superiority of the mind, Spinoza asserts that we do not yet know what the body can do. The intricate entanglement of composite bodies surpasses the governance of rationality and conscious intentions. *Ibid.*, p. 156.

<sup>12</sup> *Ibid.*, p 128.

collective, embodied task – one that necessarily involves interaction and cooperation with other bodies in order to sustain one's existence.

## **2.2. Ethological ethics as embodied, situated, relational experiment**

The ethical project of Spinoza is effectively revitalized by Deleuze's interpretation, and through its "ethological" rendering, becomes a transformative framework that conceives of ethics as an embodied, relational experiment – functioning as an antidote to the metaphysical tradition of abstraction and hierarchy. Inspired by the work of German biologist Jakob von Uexküll, Deleuze links ethics with ethology through their shared etymological root *ethos*, which originally means "habitat" and is associated with customs of how to live within one's habitat<sup>13</sup>.

Uexküll marked a radical shift in the study of animal behavior by contending that animals are not machinic automatons following a predetermined genealogical trajectory, but that each entity creates its own world – the *Umwelt* – through interaction with its distinctive environment, mediated by its perceptual and active capacities. Each *Umwelt* is unique to the entity; there is no single, uniform world that exists in the same way for all beings. Rather, there are as many worlds as there are entities<sup>14</sup>. From this perspective, ethology cannot be reduced to the identification of universal principles. Instead, it must consider each entity in relation to its surrounding environment. What becomes important in biology is not the determination of an animal's essence, but their affective capacities engaging with their surrounding environment. A notable example is that of the tick. The tick uses its light sensor to detect sunlight and climbs up a tree. It then awaits the arrival of a mammal,

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<sup>13</sup> A. Uhlmann, *Deleuze, Ethics, Ethology, and Art*, in N. Jun and D. Smith (eds.), *Deleuze and Ethics*, Edinburgh University Press, Edinburgh 2022, p. 154.

<sup>14</sup> J. Uexküll, *Theoretical Biology*, Kegan Paul, Trench, Trubner & Co. Ltd., London 1926, p. 70.

detecting it through olfactory stimulation triggered by butyric acid, prompting the tick to leap onto the mammal's skin. It then employs its tactile sense to locate a warm, hairless area on the mammal and extracts blood. The world of the tick consists of the stimuli it perceives and the actions it is capable of performing in response. In other words, there is no single unified world for all living beings; rather, there is the tick's particular *Umwelt*, composed of its specific affective relations<sup>15</sup>.

Uexküll's notion of the *Umwelt* and his understanding of ethology are pivotal to Deleuze's conception of ethics as an embodied, relational experiment. What Deleuze finds particularly compelling in Uexküll's studies is their continuity with Spinoza's understanding of the body: that the body of an animal is not to be studied in terms of its essence – its universal traits as a species – but in terms of how it is affected by its environment and how it behaves through its capacity to affect. Through Uexküll's thinking, Deleuze observes, ethology becomes a study that defines «bodies, animals or humans by the affects they are capable of», not by their «form, their organs, and their functions, and not as a subject either»<sup>16</sup>. For instance, the tick is not considered in terms of its essential traits as a species, but through its capacity to be affected and to affect – in relation to sunlight, butyric acid, and the warmth of blood<sup>17</sup>.

Deleuze insists that this understanding of the body is not only valid for animals, but for humans as well, «because no one knows ahead of time the affects one is capable of; it is a long affair of experimentation»<sup>18</sup>. The act of sustaining our existence involves understanding the affective capacities of our bodies and finding empowering ways to organize these capacities in relation

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<sup>15</sup> J. Uexküll, *A Foray into the Worlds of Animals and Humans: With a Theory of Meaning*, University of Minnesota Press, Minneapolis 2010, p. 51.

<sup>16</sup> G. Deleuze, *Spinoza, Practical Philosophy*, City Lights Books, San Francisco 1988, pp. 124-125.

<sup>17</sup> *Ibid.*, p. 124.

<sup>18</sup> *Ibid.*, p. 125.

to the affective capacities of other bodies. This brings us back to Spinoza's assertion that we do not yet know what the body can do. However, while for Spinoza this claim refers to the limitations of our conscious knowledge of the body, for Deleuze it serves as an invitation to explore and experiment with the infinite possibilities of organizing one's affective capacities with those of others in ways that strengthen one's power – by forming beneficial, empowering relationships. This experimentation lies at the heart of Deleuze's ethical project. From this perspective, *conatus* is no longer understood as a striving, but as an enactment of power. Indeed, Deleuze is hesitant to use the term *conatus*, arguing that it does not translate well into modern language. What Spinoza refers to as the essence of being is not a form of conscious effort or striving. For Deleuze, *conatus* is «exercising one's power of action at each moment, as much as there is in me. In fact, it's not an effort»<sup>19</sup>. In this sense, *conatus* departs from humanist conception of self-endurance, such as conscious effort driven by the ego of the identitarian subject or the teleology of species survival, which have often been invoked to justify human dominance. *Conatus* is not only what humans pursue, but pertains to all entities within the world. The encounters that sustain our existence do not arise only between human entities, but between infinitely diverse sets and dimensions of beings, even at the smallest molecular scale – between the particles of oxygen and the blood cells in our lungs, for instance. Nor does self-preservation imply following a predetermined set of rules. Each encounter between two different bodies is always singular and demands a unique composition, which can only be discovered by those entering in the relation. In other words, in Deleuze's conception of ethics, there is no abstract, general rule to

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<sup>19</sup> G. Deleuze, *Spinoza: the Velocities of Thought, Lecture 04*, University of Paris 8, Paris 16.12.1980, <https://deleuze.cla.purdue.edu/seminar/spinoza-velocities-thought> (last accessed: 03.04.2025).

follow, nor a final, perfect answer to a teleological quest, because it would be impossible to know the totality of the ever-changing, infinitely complex relations. It is always a process of experimentation with one's power of action in each moment, in each singular encounter.

Ethics conceived in terms of ethology is embodied, situated, and relational. This framework holds particular relevance today, amidst the pressing necessity of inventing new ways of coexisting with nonhuman beings. Ethological ethics diverges from the human exceptionalism inherent not only in exploitative practices against nature but also in certain strands of ecological thinking grounded in ethical humanism, which emphasize values such as justice, freedom, rights, and equality. While these values may be virtuous within human society, when imposed upon nonhuman entities, they become another form of human conceit, further solidifying the human position as the sole agent responsible for saving the Earth. Ethological ethics, by contrast, conceives ethics as a mode of existence that all entities engage in to varying extents, thus distributing ethical agency to nonhuman entities. Moreover, ethological ethics resists generalized moralities or holistic solutions, moving away from the objectivism that underpins Western science. It calls for a more acute attentiveness to one's surroundings and a sensitivity to the corporeal relationships with one's immediate entanglements.

Although Deleuze's primary reference point for ethological ethics may have been Uexküll's study of animal behavior, this framework extends beyond the confines of humans or animals, offering a new approach to all entities with which we come into relationship, including vegetal beings<sup>20</sup>. How could the understanding of the

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<sup>20</sup> Indeed, Federico Comollo suggests broadening Uexküll's concept of *Umwelt* to encompass life beyond animals, including vegetal and fungal life. See: F. Comollo, *A Foray into the Worlds of Plants and Fungi*, cit. Studies have also rejected Uexküll's proposition of *Umwelt* as a fixed, solid shell confined to animal organisms, instead expanding it as a concept that encompasses all forms of life and functions as overlapping, interacting mutual realms. See: A.

body in ethological ethics inform the way we consider plant ontology? How does this altered understanding affect our relationship with them?

### **3. Non-unitary, non-hierarchical life of plants**

#### **3.1. Vegetal disruption of unity and organicity**

Plants serve as exemplary cases that help us view the world through a Spinozist-Deleuzian lens, conceiving entities in terms of packets of affective powers rather than generalized categories such as species or genera. First and foremost, vegetal beings challenge the conventional notion of species. If a species is defined as a group of organisms capable of reproducing through the exchange of genetic material<sup>21</sup>, plants significantly complicate this framework. Some plants, such as dandelions, produce seeds asexually without genetic exchange, while certain organisms, like *Armillaria* (technically a fungus rather than a plant), exhibit a genetic mosaic containing up to fifty different species<sup>22</sup>. Some plants produce clones that gradually alter their genetic material over time. Additionally, plants of different species are capable of fusing their roots – grafting is possible precisely through this cross-species merging<sup>23</sup>. As studies on symbiotic life repeatedly demonstrate, far from pertaining to the clearly demarcated categorization of species, multispecies entanglement is the common mode of vegetal existence.

As several thinkers on vegetal life contend, plants also increasingly complicate notions underlying the Western metaphysics, such as individuality, identity, and selfhood<sup>24</sup>. A

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Markoš, J. Švorcová, *Of Bubbles and Foams: Umwelt Counterpoints in Symbiosis*, in «Sign Systems Studies», 52, 3–4, December 31, 2024, pp. 438–56.

<sup>21</sup> A. Tsing, *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins*, Princeton University Press, Princeton 2021, p. 232.

<sup>22</sup> *Ibid.*, p. 231

<sup>23</sup> S. Sandford, *op. cit.*, p. 34.

<sup>24</sup> For further reference on critical plant studies, see for example: M. Marder, *Plant-Thinking: A Philosophy of Vegetal Life*, Columbia University Press, New York 2013; M. Marder, *Grafts: Writings on Plants*, Univocal Pub LLC, Minneapolis 2016; M. Marder, L. Irigaray, *Through Vegetal Being: Two Philosophical*

closer look at vegetal life reveals that the notion of individuality becomes hardly compatible. As Stella Sandford states in her study of vegetal sex, if an individual is defined as «a living being that cannot be divided without dying», then, in the case of plants, the opposite occurs: division signifies multiplication, not death<sup>25</sup>. Furthermore, this multiplication does not imply the creation of more individuals or replications, as it remains impossible to pinpoint which part of the plant constitutes a new individual – whether it is the stem, the bud, the flower, or the fruit<sup>26</sup>. Sandford observes that plant existence is «simultaneously singular and plural; unity and community coexist without either taking precedence over the other»<sup>27</sup>. In a similar vein, Andrew Lopez and M. Polo Camacho challenge the assumption that biological individuality is a self-evident concept. Informed by an eliminativist approach, their analysis of algae suggests that biological entities are better understood as dynamic processes rather than as fixed biological individuals<sup>28</sup>. Given that the properties of algae are causally entangled with external environmental conditions and interactions with other organisms – such as phosphorous, and other nutrient levels – no algae exist as an individual object per se; they exist as a processual constellation of unique cellular parts operating in

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*Perspectives*, Columbia University Press, New York 2016; M. Marder, E. Casey, *Plants in Place: A Phenomenology of the Vegetal*, Columbia University Press, New York 2023; M. Marder (ed.), *Critical Plant Series*, Brill, Leiden 2013-present; F. Hallé, *In Praise of Plants*, Timber Press, Portland 1999; S. Sandford, *op. cit.*; E. Coccia, *The Life of Plants: A Metaphysics of Mixture*, Polity Press, Cambridge 2018.

<sup>25</sup> S. Sandford, *op. cit.*, p. 32.

<sup>26</sup> *Ibid.*

<sup>27</sup> *Ibid.*, p. 33.

<sup>28</sup> The study also introduces an eliminativist approach, wherein certain terms or concepts are removed from the conceptual framework of research rather than revised or redefined. Within this perspective, the notion of biological individuality is critically examined, and the elimination of terms such as "object" or "organism" is proposed in favor of focusing on constituent parts and their interactions. A. Lopez, M. Polo Camacho, *There's Something in the Water: Algae, Eliminativism, and Our Moral Obligations to Biological Beings*, in Y. Hale Hendlin et al., *Being Algae: Transformations in Water, Plants*, Brill, Leiden 2024, pp. 26-42.

concert<sup>29</sup>.

Plants also depart from the notion of harmonic unitarity, where the parts serve the whole through the operation of a centralizing system, often exemplified by the brain in animals. In contrast, the elements that compose the plant exhibit a modular character, in that «[e]ach shoot (so, on a tree, each branchlet or twig) produces, indefinitely, reiteratively, functional units (called phytomers) comprising bud and leaf and often flower. In this way the plant clones itself—clones its basic form – on itself, indefinitely. It has no final form»<sup>30</sup>. Furthermore, the cells that make up these plant units are potentially totipotent, meaning that one cell from the bud can easily transform into a cell of the stem<sup>31</sup>, further complicating the notion of a centralized organism. In this sense, plants are not unitary, autonomous organisms, but loose assemblages of microscopic, heterogeneous elements. Each of these microscopic elements encounters other microscopic elements, organizing encounters that are beneficial for their sustenance. For example, encounters occur between nitrogen in the soil and the membranes of root cells, between mineral grains and earthworm mucus, and between chlorophyll in leaves and the intensity of sunlight<sup>32</sup>.

### **3.2. *Ethological ethics of plant life***

With neither an autonomous self to preserve nor a hierarchically centralized system, plants challenge certain humanist notions projected onto vegetal life – such as the idea of the survival of a unitary individual or the teleology of species survival. From

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<sup>29</sup> *Ibid.*, pp. 30-31.

<sup>30</sup> S. Sandford, *op. cit.*, p. 29.

<sup>31</sup> *Ibid.*, p. 30.

<sup>32</sup> This non-totalizing characteristic of plants resonates closely with the notion of the Body without Organs (BwO) in the philosophy of Deleuze and Guattari, where the concept of an organism, in which parts serve the purpose of the whole, is rejected in favor of a rhizomatic assemblage. Although this relevance requires further investigation, it is beyond the purview of this paper.

the perspective of ethological ethics and Deleuze's rejection of *conatus* as a conscious striving, it is not the tomato as a biological individual or a species that strives to survive; rather, it is each microscopic cellular element of the plant that persists as much as it can. These elements realize their maximum affective capacity through a series of encounters with other entities that are mutually implicated in the environment. Michael Marder expresses this characteristic as follows: «The striving of vegetal beings is not a simple unidirectional effort; the non-conscious intentionality of plants and plant parts [...] is hopelessly dispersed and disseminated»<sup>33</sup>.

Hence, ethological ethics would suggest that if the tomato vine in the garden does not grow as quickly as the one next to it, it is not because it is weaker or has “lost in the competition” – the image we often have of vines encroaching on other plants or tall trees stealing all the nourishment from those below. Instead, it is simply because parts of its elements have not yet discovered the encounters that would allow it to fulfill its maximum power of action. If many of the seeds<sup>34</sup> we have sown in the garden have failed to germinate, it may be because they have not yet entered into relationships where their capacity to affect and be affected could be fully realized. They have not had the right encounters with soil, sunlight, nutrients, space, insects, other plants, and so on. The infinitely divisible elements that comprise the tomato plant each function to the maximum of their capacity to endure, but the tomato as a whole does not conform to a teleological order of reproduction or survival of its species.

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<sup>33</sup> M. Marder, *Plant-Thinking: A Philosophy of Vegetal Life*, Columbia University Press, New York 2013, p. 42.

<sup>34</sup> Marder notices a particular indifference inherent in vegetal existentiality, exemplified in the seed: «[T]he seed, entrusted to the randomness of chance and the externality of its medium (the earth), contains the possibility, indicative of its freedom, of being wasted, spread, spent for nothing. This possibility, coextensive with the seed's utter indifference, extricates it from the demands of productive or reproductive sexuality; non-teleological play, which more often than not results in nothing, is an integral part of the operativity (or, better yet, the inoperativity) of the seed». *Ibid.*, p. 89.

In this sense, vegetal life operates as an anarchic, horizontal assemblage of microscopic multiplicities.

The inherent heterogeneity and horizontality of plants reveal modes of existence that fundamentally diverge from individualistic worldviews – whether those that prioritize solitary survival through competition or those that legitimize hierarchical organization in service of a unified whole. As Marder argues, the plant body, as a «non-totalizing assemblage of multiplicities» is an «inherently political space of conviviality»<sup>35</sup>. It embodies a mode of being-with that is not grounded in the notion of organicity, where parts serve the demands of the whole. After all, precisely the division between the individual unit and the whole itself becomes blurry. For, «plant’s divisibility renders irrelevant the task of reconciling particular, individual interests and the universal Good, since what happens below individual unities bears directly upon common well-being»<sup>36</sup>. Importantly, plants suggest a different approach to otherness. If we perceive a plant as an assemblage of heterogeneous elements that do not coalesce into a unitary totality – an assemblage of constantly fluctuating states of encounters and affective interactions in the web of interconnection – otherness becomes something that each element must necessarily embrace and let through. «In the absence of identity», Marder asserts, «the increase of power for the plant ‘itself’ implies the augmentation of power for its ‘other,’ be it another plant or inorganic nature as a whole»<sup>37</sup>. In other words, the fundamental interdependency renders the alterity of the other not as a threat to the plant but as something it actively seeks, engaging in a constant process of becoming-other and being-with<sup>38</sup>. This mode of vegetal life once again resonates with the

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<sup>35</sup> *Ibid.*, p. 85.

<sup>36</sup> *Ibid.*, p. 52.

<sup>37</sup> *Ibid.*, p. 41.

<sup>38</sup> *Ibid.*, p. 51.

postulates of ethological ethics, where, in the web of interdependency, the empowerment of an entity in its capacity to endure necessitates the empowerment of others.

### **3.3. Repositioning of humans in the human-plant relationship**

Understanding plant ontology from the perspective of ethological ethics not only helps us perceive plants beyond the metaphysical values, such as individuality or self-containment inherent in the anthropocentric worldview, but also invites us to reimagine plant-human relationship. Interdependency, posited as the basic condition of life, extends beyond the vegetal realm and offers a perspective for rethinking the human position in relation to plants, or to non-human beings in general. Timothy Morton asserts that «solidarity is cheap», as the vast non-human entities that already inhabit and cooperate within the human microbiota render solidarity the default affective state of the biosphere<sup>39</sup>. Responsibilities, therefore, emerge not from humanist altruism or benevolence but inherently from our existence, as other bodies continuously shape and determine our actions in the present moment.

Moreover, if plants are not unitary wholes, they cannot be reduced to a single purpose. Conventional agriculture reduces plants to unitary entities and presupposes humans as the endpoints of all possible relationships they can have. In this framework, plants are viewed as dependent on human stewardship—the tomato becomes something that humans must fertilize, water, tend, and harvest; at the same time, they serve a single purpose – human consumption. However, plants – as assemblages of infinitely divisible parts, each possessing its own affective capacity that allows them to seek beneficial encounters on their own dimensions indifferent to the survival of the whole – sustain

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<sup>39</sup> T. Morton, *Humankind: Solidarity with Non-Human People*, Verso, London 2019, p. 21.

their presence through endless unique relationships with diverse entities in the biosphere. Within this intricate web of encounters and interactions, the various components of the tomato assemblage engage in relationships as nutrients, support structures, compost, pollen, soil breakers, hydration sources, and more. This understanding resists the subordination of the plant to a holistic system or its reduction to a single purpose, which has often been the economic value of human consumption and utilization.

This reminds us that our encounter with the plant is just one among millions that the plant is simultaneously engaging in. By observing the numerous relationships the plant assemblage can form and simply allowing these relationships to flourish on their own, the human role is reduced to just one part of the endless interactions within the web. This is not a demonization of human presence, but rather an opening up of many roles assumed by humans, allowing them to be filled by other existences. Nor should human desires and needs be denied – human asceticism is another form of humanistic conceit. Instead, the question that must come to the fore is how to join the existing sociable network of nonhuman beings. How can we integrate our needs into a garden that already exists as a thriving network? How can we maximize and expand our capacity to affect and be affected in ways that benefit the web of interdependencies within the garden? In the next section, I will examine Permaculture as precisely this practice of unlearning the conventional human role of dominance and stewardship, and learning the workings of ethological ethics that are inherent in the ontology of plants and their environment. I argue that the principles of Permaculture are focused on the task of repositioning the human role as one of the many affective exchanges happening between the multiple participants in this world.

#### 4. *Permaculture as a practice of ethological ethics*

As its name suggests, Permaculture is an (agri)cultural movement that seeks to learn from and integrate into the cycles of nature, creating a “permanent” cycle of subsistence. Coined by Australian biologists Bill Mollison and David Holmgren in the 1970s, permaculture is described as a philosophy of:

working with, rather than against, nature; of protracted and thoughtful observation rather than protracted and thoughtless action; of looking at systems in all their functions, rather than asking only one yield of them; and of allowing systems to demonstrate their own evolutions<sup>40</sup>.

This approach contrasts with the current mode of industrial capitalism, which is based on a linear model of input and output involving unchecked exploitation of resources and the relentless outpouring of waste. It is essential to recognize that Mollison and Holmgren did not formulate the concept of permaculture *ex nihilo*. Rather, their theoretical framework was significantly informed by close observation of Tasmanian Indigenous agricultural practices<sup>41</sup>. After all, as Dennis Martinez, an Indigenous rights leader of O’odham and Chicano heritage, notes, sustainability is not a novel concept. Rather, it has historically functioned as a foundational ethical-economic model for millions of people, who have endured and adapted to environmentally challenging conditions over millennia, developed sophisticated principles aimed at minimizing ecological disruption and cultivating cultures of land-care<sup>42</sup>. Informed by

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<sup>40</sup> B. C. Mollison, *Permaculture: A Designers’ Manual*, Tagari, Tyalgum 2004, pp. ix-x.

<sup>41</sup> B. C. Mollison, *op. cit.*, p. ii.

<sup>42</sup> D. Martinez, *Redefining Sustainability through Kincentric Ecology*, in M. K. Nelson and D. Shilling (eds.), *Traditional Ecological Knowledge: Learning from Indigenous Practices for Environmental Sustainability*, Cambridge University Press, Cambridge 2018, p. 157. It is also important to recognize movements led by Indigenous and non-Western scholars and thinkers who emphasize the value of Traditional Ecological Knowledge (TEK) and work toward bridging it with Western science. Key characteristics of TEK include its place-based and relational nature, as well as its transmission through an intergenerational chain of knowledge passed down via stories and embodied practices, such as rituals. (*Ibid.*, pp. 139-174.) For further reference see: R. Wall Kimmerer, *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge, and the Teachings of*

these practices, Permaculture constitutes a syncretic assemblage of ancestral Indigenous knowledge, ecologically sustainable practices, and contemporary technological innovations drawn from diverse global contexts. This integrated approach articulates a mode of existence in which human life can be maintained without depleting of natural resources or accelerating mass extinction. Now grown into a global movement practiced across the world – from commercial farms to individual balconies – it seeks to create sustainable habitats by observing and aligning with nature’s patterns.

One of the core principles of Permaculture is the recognition of the multifunctionality of every entity. No plant exists solely to yield fruit. A tree, for example, not only produces fruit and lumber but also provides shade, shelters pollinators, absorbs carbon dioxide and releases oxygen, blocks wind, creates microclimates, enriches the soil with nutrients through its leaves, and prevents soil erosion through its roots. This perspective closely aligns with the premises of ethological ethics, which encourages understanding entities not in terms of generalized totalities, but as heterogeneous multiplicities, each enacting its affective capacity. This recognition underpins Permaculture’s emphasis on polyculture and intercropping. For instance, the "milpa" method<sup>43</sup>, originating from Mesoamerican farming traditions, involves planting corn, beans, and squash together. Each plant produces a yield, but this is not its only function. The corn serves as a support structure, the bean fixes nitrogen in the soil and softens the earth through its root

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*Plants*, Milkweed Editions, Canada 2013 and other articles in M. K. Nelson and D. Shilling (eds.), *Traditional Ecological Knowledge*, Cambridge University Press, Cambridge 2018.

<sup>43</sup> The milpa system, also known as the “three sisters” system, is a widely adopted intercropping method in the Mesoamerican farming tradition. Researchers contend that the milpa system, established between 7,000 and 4,400 calendar years before present, may have formed «the base for the development of ancient complex societies». D. Zizumbo-Villarreal, P. Colunga-García Marín, *Origin of agriculture and plant domestication in West Mesoamerica*, in «Genet Resour Crop Evol», 57, 2010, pp. 813–825.

system, and the squash acts as mulch, helping to retain moisture and suppress weeds. As these plants decompose, they become natural fertilizers, enriching the soil with their biomass. In this way, permaculture observes and follows how plants engage in an infinitely diverse array of interconnected relations through their multiple affective capacities.

The Permaculture principle can be interpreted as aiming to integrate into a system where all affective capacities are enacted to their fullest, ensuring that no resource is wasted and no waste goes unused. Similar to forests, in the biospheric cycle, there is no such thing as resource loss, and therefore, no waste. Waste is converted into resources, just as tree leaves and animal carcasses become food for smaller animals, insects, and microorganisms. Rather than adhering to a linear model that relies on continually adding external resources to create a product and generating waste with no destination, Permaculture explores ways of integrating into the circular patterns of nature. For example, intercropping reduces the need for external inputs such as pesticides and fertilizers, while the use of mulch and the creation of microclimates minimize labor-intensive practices like tilling, weeding, and watering. Composting further exemplifies this approach by transforming waste into a resource – leaves, branches, and kitchen scraps become rich humus that serves as soil and fertilizer for plants. In this way, Permaculture focuses on integrating human roles and needs into the multifunctional, cyclical processes of other entities in the biosphere. Its goal is to integrate into these cycles as fully as possible, to the extent that human involvement – such as labor, time, and intervention – is minimized, and humans withdraw from their dominant role.

The Permacultural approach represents a radical shift from anthropocentric responses to the imminent ecological crises, as it de-centers humans as the sole ethical agents. Arguments that

call for ethical obligations based on self-sacrificing altruism, normative morality, or utilitarian benefits are, in one way or another, grounded in an exceptional positioning of human ethical agency. In contrast to these anthropocentric approaches, from the perspective of ethological ethics, ethical behavior arises from the recognition of interconnectivity and the subsequent need to experiment with and organize mutually empowering relationships – an act in which all entities participate. Similarly, Permaculture ethics is «based on the perception that we are embedded in a web of complex relationships in which personal actions have consequences for more than ourselves and our kin»<sup>44</sup>. Of course, this shift in perspective must be approached with care, as diluting ethical agency should not mean diminishing human responsibility or disregarding the asymmetrical power that human agency has historically assumed<sup>45</sup>. Permacultural practice is a continuous engagement with the question raised by Maria Puig de la Bellacasa: «How do we engage with the care of Earth and its beings without idealizing nature nor diminishing human responsibility by seeing it as either inevitably destructive or mere paternalistic stewardship?»<sup>46</sup>.

The framework of ethological ethics helps address this question from an embodied, situated, and relational perspective. It shifts the focus away from viewing both humans and plants as generalized species and instead views each entity as an assemblage of multiple capacities to affect and be affected. Naturally, these affective capacities vary in degree. One might argue, for instance, that humans possess a greater capacity to sustain their existence than plants. However, the dominant mode of affective capacity reinforced in human society is largely unidirectional – a capacity to act upon others through accumulated technologies of

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<sup>44</sup> M. Puig de la Bellacasa, *Matters of Care: Speculative Ethics in More than Human Worlds*, University of Minnesota Press, Minneapolis 2017, p. 146.

<sup>45</sup> *Ibid.*, p. 144.

<sup>46</sup> *Ibid.*

utilization and appropriation – while significantly lacking a reciprocal capacity to be affected by others. As the catastrophic environmental consequences of this asymmetry make clear, such a mode cannot lead to genuine empowerment. In a web of interconnections, any harmful exercise of affective capacity – diminishing others' power to act – inevitably diminishes one's own. Ethological ethics, therefore, calls for the necessity of understanding, experimenting with, forming, and sustaining mutually empowering relationships. Similarly, permacultural practices «promote ethical obligations that do not start from, nor aim at, moral norms but are articulated as existential and concrete necessities»<sup>47</sup>. The necessity to act ethically arises from the relationships one forms within one's own habitat. While there may be sets of knowledge accumulated over long periods of time, there is no single method that can be applied universally across all gardens and farms. Permacultural practices require a continuous conversation with multiple agents, honing the ability to observe and respond to them. In the situated practices of Permaculture, the holistic, idealized conception of 'Nature' gives way to complex webs of molecular affective capacities with which one engages, aimed at mutual flourishing.

## **5. Conclusion**

This paper began by exploring the mode of plant existence and their way of engaging with the world beyond anthropocentric frameworks. Through Deleuze's conception of ethological ethics I have attempted to understand plants as non-unitary, non-totalizing assemblage of infinitely divisible parts – each part acting toward its own sustenance by organizing mutually empowering relationships with surrounding bodies. The framework of ethological ethics not only enables a rethinking of plant ontology beyond anthropocentric projections, such as

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<sup>47</sup> *Ibid.*, p. 145.

individuality, autonomy, and species, it also reorients how we understand our position within human-plant relationships and how we conceive of ethical agency. If ethics, as ethological ethics suggests, is understood as the pursuit of self-preservation through interdependent relations, then plants embody and enact ethics just as much as humans do – ethics becomes a condition of existence grounded in necessity. This perspective decouples ethics from the humanist paradigm rooted in altruism or self-sacrifice, displacing humans as the sole bearers of ethical agency. On this horizontal plane, plants participate in a far broader range of relations than those confined to growth and consumption, while the dominant position traditionally accorded to humans is diffused. Within this context, the paper has introduced Permaculture as a movement that resonates with the principles of ethological ethics. We have seen that by repositioning humans as participants within a broader ecological web, Permaculture promotes their integration into the heterogeneous, complex relationships that plants already excel at navigating. Through this approach, we are invited to reimagine human-plant relations neither as forms of dominance nor as forms of self-denial, but as collective practices that cultivate mutual flourishing.

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