

Imagining Plant-Like Futures? Vegetal Intelligence in Brian Aldiss' Hothouse (1962)

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Abstract

In *Through Vegetal Being* (2016, written with Luce Irigaray), Michael Marder asserts that “by robbing plants of their time, and especially of their future, we deny a future to human and all other living beings” (144). For Marder and other critical plant studies scholars, the future of humanity is contingent on our alignment with vegetal temporality and the envisaging of a societal order with peculiarly plant-like attributes. In his deconstruction of Western metaphysics, Marder appears in alignment with the ethnobotanist and psychonaut Terence McKenna (1989), whose heuristic “plan/plant/planet” positions the botanical kingdom as a creative organisational matrix for the twenty-first century. How might we imagine humanity in 2050 as more plant-like—as in higher synchronisation with vegetal temporality in our scientific, technological, cultural, and interpersonal pursuits? How might we resist denying a future to plants and, thus, to ourselves and other beings? And how might the genre of science fiction enable us to build up the imaginative faculties and transgressive outlooks required for doing so? In the context of these questions, this article will undertake a reading of Brian Aldiss' *Hothouse*, recipient of the 1962 Hugo Award for Best Short Fiction. The novel is a work of futuristic science-fiction with prominent vegetal protagonists, such as omnivorous spider-like plants. Humans grapple in the narrative with the threat of extinction by, for instance, seeking refuge in the canopy of a gargantuan banyan tree. I argue that works of science fiction, such as *Hothouse*, narrativize the ideas of Marder and McKenna by allowing readers to suspend chronos-inflected, reductionistic conceptions of plants. The first step toward a plant-like future—if that is even desirable in the first place—is the eschewing of conventional ideas of vegetal nature as a relatively unmoving, unfeeling, non-sentient constituent of our perceptual domains.

Keywords: critical plant studies; science fiction; Brian Aldiss

1. Introduction

In its analysis of thirteen-thousand plant species worldwide, the International Union for Conservation of Nature calculated a sixty-eight percent rate of critical endangerment. Other estimates, such as the State of the World's Plants Report by Kew Gardens, suggest that twenty to twenty-five percent of the world's plants are threatened with extinction. When we consider the profound interconnections between plants and humanity through food, drink, medicine, fiber, elemental exchange, cultural heritage, and spiritual sustenance, these become especially harrowing statistics. How might we imagine humanity in 2050 as more plant-like—as in higher synchronization with vegetal being in our scientific, technological, cultural, and interpersonal

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pursuits? Perhaps the world in 2050 will be committed to halting plant loss, bringing species frozen in seedbanks back to life, and valuing the botanical heritage of the earth. Perhaps it will be a world in which countries enact laws protecting plants and granting them moral standing. A world in which plant research at educational or governmental institutions requires ethical clearance. A post-petroleum world energised by highly efficient and quiet renewable photovoltaic sources. A world that increasingly greens its cities—as in the Beirut Wonder Forest model—as a counterforce to exponentially growing urban populations. Or would the plant-like future involve a metaphysical shift towards vegetal forms of being and becoming that would transform culture and society at a fundamental level? And how can the genre of science fiction enable us to build up the imaginative faculties required for breaking down the ontologies that divide humans from flora, fauna, and fungi?

In approaching these latter questions, this article looks towards Brian Aldiss' vision of a vegetal future in his 1962 novel *Hothouse*. In Aldiss' narrative, humans grapple with the threat of their extinction by seeking refuge in the canopy of an immense banyan tree. Intelligent forms of plant life—including giant spider-like traversers, superbirds, whistlehistles, bellyelms, wiltmils, and other with intriguing names—have come to preside over the earth, one side of which perpetually faces the sun: "Obeying an inalienable law, things grew, growing riotous and strange in their impulse for growth [...] It was no longer a place for mind. It was a place for growth, for vegetables. It was like a hothouse" (1). After the techno-industrial collapse of human society, monstrous vegetal creatures pushed tribal groups to the hostile margins between day and night. As Aldiss later tells us, "they had finally triumphed, the vegetables had triumphed as much by weight of numbers as by inventiveness. Time and again, they succeeded simply by imitating some device used long since—perhaps on a smaller scale—in the animal kingdom" (92). Yet, in *Hothouse*, monstrous plant creatures occupy an ambiguous ontological terrain that is indicative of contemporary Western societies' somewhat dysfunctional approach to the vegetal world. Aldiss' plants are intentional and inventive yet imitative of animals, percipient yet consumed by the same mindless over-proliferation that beleaguers humanity before its collapse.

2. Critical Plant Studies and Science Fiction

The question of future and flora is timely. The last five years have seen a growth in plant studies from cultural, literary and philosophical perspectives. Scientific research into plant signaling and behavior has supplied a catalyst for re-evaluating plants and our relationships to them. In *Through Vegetal Being* (2016, written as a dialogue with French philosopher Luce Irigaray), Michael Marder asserts that "by robbing plants of their time, and especially of their future, we deny a future to human and all other living beings" (144). For Marder, an alignment between human beings and vegetal temporality may lead to a societal order with increasingly plant-like attributes. A vegetal future involves a revitalised temporal sense and an experience of time located in place "that does not hasten to transport me to the past or to the future beyond the current horizon. The closest analogy to this experience, perhaps, is the feeling of one's own body—feeling oneself feel" (151). The future is embodied emplacement that resists the entrenched psychological divisions between past, present and future. More specifically, Marder sees a paradigm for human empowerment within the non-extractive photosynthetic mode of being: "That is still another vegetal lesson to be learned: how to energize oneself, following the plants, without annihilating

the sources of our vitality” (185).

Similarly, in an essay from 1989, the ethnobotanist and psychonaut Terence McKenna proposed the heuristic “plan/plant/planet,” positioning the botanical kingdom as the creative matrix for the twenty-first century: “I propose that we should adopt the plant as the organizational model for life in the 21st century, just as the computer seems to be the dominant mental/social model of the late 20th Century, and the steam engine was the guiding image of the 19th Century” (1). McKenna concludes by articulating some of the lessons, both metaphysical and physical, of vegetal life, including inwardness, connectedness, symbiosis, detoxification, whole system fine-tuning, recycling, photovoltaic power, a global atmosphere-based energy economy, nanotechnology, and the maintenance of biological diversity as a repository of plant heritage.

Before returning to the vegetal future of Aldiss’ *Hothouse*, it is worth considering what critics have said of the connections between science fiction and environmental sustainability. Scholarly studies of the ecological implications of sci-fi appear relatively plentiful in the fields of ecocriticism and environmental design. Igea Troiani (2012) examined the potential of post-apocalyptic ecological science fiction novels and films to inspire sustainable architectural design. She concludes that, rather than an impractical, fanciful or outlandish genre, sci-fi can reveal ecological architecture pathways for future energy use through its appeal to the imagination. Eric Otto and Andrew Wilkinson describe the emphasis within green discourse on technological rationality. In their study of time-travel narratives, the authors argue that sci-fi allows the reader to call into question the mechanistic worldview of technological utopianism and encourages sociocultural transformation of the kind that environmental sustainability requires today. Sci-fi narratives encourage discussion of environmental crises not only in terms of technical solutions but also through human behaviors and societal norms. Ecocritic Patrick Murphy (2009, 89–118) characterises the genre as nature-oriented literature that enables critical thinking necessary to link present actions and decisions to the future. Few studies, however, examine potential contribution of sci-fi to understanding human relations to the vegetal realm, including matters of ethics, conservation, species loss, and botanical futures.

3. *Hothouse* as a Critical Plant Studies Text

In *Hothouse*, the tribespeople Gren, Poyly, Veggy, May and others take refuge in the canopy of an gargantuan immortal banyan tree blanketing the illuminated side of the earth. On first impression, the banyan mothership evokes the Yggdrasil of the thirteenth-century Poetic Edda, the immense tree that bridges the nine worlds of Norse cosmology. A highly adaptive and intelligent plant system, the banyan is “the longest lived organism ever to flourish on this little world” (Aldiss 1962, 31). Aldiss goes on to describe the evolutionary means by which the banyan achieved supremacy:

On this continent, the banyan, thriving in the heat and using its complex system of self-rooting branches, gradually established ascendancy over the other species. Under pressure, it evolved and adapted. Each banyan spread out farther and farther, sometimes doubling back on itself for safety. Always it grew higher and crept wider, protecting its parent stem as its rivals multiplied, dropping down trunk after trunk, throwing out branch after branch, until at last it learnt the trick of growing into its

neighbour banyan, forming a thicket against which no other tree could strive. Their complexity became unrivalled, their immortality established. (31)

Aldiss' reference to the banyan's "complex system of self-rooting branches" and the ensuing description of the tree's intentionality, behavior, and learning echoes Charles Darwin's theory of plant-root intelligence. At the end of *The Power of Movement in Plants* from 1880, Darwin invokes the similarities between plant and animal movements and postulates that the plant brain lies in the root tip, or radicle, the part of a plant embryo that becomes the primary root: "[...] it is hardly an exaggeration to say that the tip of the radicle [...] acts like the brain of one of the lower animals; the brain being seated within the anterior end of the body, receiving impressions from the sense-organs, and directing the several movements" (419). Darwin placed this contention at the end of the treatise, aware that the statement would garner negative responses from biologists, such as Julius von Sachs, committed to a zoological paradigm of intelligence. Darwin figured the plant as an upside-down human, with its brain in the soil and its reproductive organs and waste disposal mechanisms in the air. His prescient intimations have markedly influenced the development of new understandings of plant capacities. Recent empirical research indicates that plant cells and human neurons share more characteristics in common than scientists previously recognized. Anthony Trewavas (2002) uses the clever term "mindless mastery" to signify the specific intelligence of plants despite their lack of brains and neurons.

In *Hothouse*, the root-brain hypothesis surfaces in the description of burnurn plants, translucent seed casings who exploit fire as a method of self-defense in the perilous high strata of the banyan canopy: "Here in the Tips, relying on that sun for its strange method of defence, the burnurn ruled among stationary plants. Already its sensitive roots told it that intruders were near" (33). Lily-yo, the leader of the tribe, disarms the burnurn by casting a shadow on their fire-brewing urns. In response, the plants demonstrate affective states: "As if realizing that this ruined its method of defence, the plant drooped in the shade, a picture of vegetable dejection with its flowers and its urns hanging limply" (34). However, Aldiss does not so whole-heartedly bestow intelligence to the plants of this perpetually illuminated world. Many of his vegetal creatures, despite exhibiting behavior, learning, emotions, sentience, and so forth, are depicted as automatons who voraciously accrete biomass. For instance, there is the suckerbird: "being of vegetable origin, it had little intelligence and only a rudimentary nervous system. What it lacked in this respect, it made up for in bulk and longevity" (72). Whereas the plants of *Hothouse* cannot speak, the sentient morel is a charismatic talkative fungus who colonises the male tribesman Gren's brain, directing and at times manipulating him through the course of the narrative's second half.

4. Conclusion: Botanical Futures

Returning to the idea of plants in the world of 2050, this section will reflect briefly on the vegetal lessons of *Hothouse* grounded in the qualities articulated by Marder and McKenna: autopoiesis, inwardness, brainlessness, freedom from constructs of past, present, and future (although research does indicate that plants can remember events and adapt their behaviors accordingly). It is the prominence of the intelligent morel in *Hothouse* that problematises our assignation of intelligence to certain categories of life over others. At the risk of upending its own argument, this article

suggests that to privilege a plant-like future is to swing the pendulum of speciesism towards the vegetal and away from the myriad other biological forms that make life on earth possible. To this effect, at the end of the novel, an integrated posthuman vision of the future emerges in which the former distinctions between life disintegrate in the new world: “Were the tummy-bellies vegetable or human? Are the sharp-furs human or animal? And the creatures of the hothouse world, these traversers, the killer-willows in Nomansland, the stalkers that seed like plants and migrate like birds—how do they stand under the old classifications?” (1962, 306). Aldiss suggests that a plant-like future will also be fungi-like, bacteria-like and, to be certain, mammal, bird and human-like. This is a future in which nature in its wholeness, rather than in its particular forms, is recognised for its intelligence and sentience.

Embracing an integrated vision of life is not to dismiss the lessons presented to us through close attention to and conscientious participation in the botanical world. To receive the knowledge of plants requires a kind of openness to vegetal being intimated but not fully actualised in *Hothouse*. The dystopian vegetal future of the novel is plagued by war-like defensiveness against plant-animal hybrids, rather than the harmonious states of dynamic exchange possible on the planet today. What is more, despite their dominance and sentience, the vegetal creatures are rendered as mindless, though not in Darwin or Trewavas’ root-brain terms. In the novel, plant life is invariably unthinking, mechanistic, menacing, and consumed with growth. As ecocritics point out, the value of sci-fi for sustainability lies in its facilitation of critical thinking and prompting of the imagination towards new possibilities. *Hothouse* leads us back to a future in the extraordinary flora—and fauna, fungi, and micro-organismic life—in which we are immersed on an everyday basis and which occupies our bodies, as posthumanist scholars such as Donna Haraway (2008) have emphasised. The vegetal creatures of *Hothouse* remind us that plants already dominate the world, accounting for ninety-nine percent of the Earth’s biomass. And rather than expelling us to the margins of existence, plants lovingly provide everything we need to survive.

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