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Research Article

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Gardens in the Gallery: Displaying and Experiencing Contemporary Plant-art

https://doi.org/10.1515/culture-2024-0018 received April 30, 2024; accepted July 6, 2024

Abstract: This article explores different institutional approaches to exhibiting and maintaining living, plant-based sculptures, and installation art. By studying the creation and management of artworks by Gilberto Esparza, Michael Wang, Precious Okoyomon, and Daniel Lie, this article considers how cultural institutions can incorporate ethics of more-than-human care in their conservation practices. As each of these artworks grows, decays, and dies through differing states of institutional intervention (or lack thereof), their provocative experiments through the themes and aesthetics of queer ecology, vegetal technoscience, and botanical decolonization invite museum staff and visitors alike into biodynamic, multisensory engagements with multispecies collaboration that turn the white cube into soil and green.

Keywords: environmental art, botanical sculpture, installation art, museum studies, exhibition maintenance, multispecies artmaking, living sculpture, bio art, curated decay, plant temporality

"My working will be the work."

—Mierle Laderman Ukeles, 'Manifesto for Maintenance Art,' 1969.

"Anyone who sows seeds would deeply experience the hope promised by time,"

—Hu Fang, 'Why We Look at Plants, in a Corrupted World,' 2015.

1 Introduction

In 1999, the United Kingdom's Museum and Galleries Commission published a series of guidelines regarding the use and display of flowers and plants in museum spaces. The commission notes that, among their best practices for risk management, "no cutting or potting up may take place in the galleries," "visitors must not have to walk around a plant or floral display to read a label," "faded blooms must be removed daily and the area left free of debris," and that "the area must be kept clean and dry at all times" (Cassar, 1999, pp. 3–4). In recent years, artists Precious Okoyomon, Michael Wang, Gilberto Esparza, and Daniel Lie have defied a number of these guidelines in their botanical sculptures and installations. While the presence of live plants in museum displays is not a contemporary phenomenon, the use of plants to create art about environmental change and the impacts of the climate crisis has grown in frequency over the past decade. As these botanical artworks challenge long-held standards for proper exhibition procedures through their production and execution, it is important for museums to consider alternative approaches to display that can successfully balance the artist's creative intent with visitor and gallery safety.

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For this analysis, it is important to differentiate these plant-based works from other forms of environmental art. Scholar John Charles Ryan's use of the phrase "plant-art" is especially useful here (2015, pp. 40–41). Ryan (2015) defines plant-art as a body of environmental works in which living plants "are involved fundamentally as agents, actants, and co-creators" in the design of artworks (p. 41). "Plant-art productions," Ryan writes, "call attention to different manifestations of botanical volition as plants decide – in a seemingly spontaneous and unchoreographed manner – to participate in (or opt out of) a work," creating opportunities for "addressing, although not entirely resolving, anthropocentric representation and aestheticization" through "sensory interaction between visitors and flora through the interplay between different sense modalities" (p. 46). This relational dynamic between plants, artists, and visitors enables engagements with botanical forms of different plants' traditional art historical use as aesthetic symbols, passive objects of representation, or inert material, enabling a new kind of interdependent interaction that embraces the plant's subjectivity as a living organism and the unpredictability of human and non-human encounters. Plant-art emerges from the genealogy of "ecoart," an activist offshoot of the land art movement in the 1960s and 1970s that sought to bring natural materials into galleries in order to visually represent "the web of interrelationships between the physical, biological, cultural, political, and historical aspects of ecosystems" (Wallen, 2012, p. 235). Artist Wallen (2012) defines eco-art's aesthetic as "participatory as opposed to [solely] spectatorial" (p. 235). This particular creative principle reverberates through today's plant-art practices as artists approach patterns of botanical expression and morphology through experiments that invite interactive, multisensory engagement.

Plant-art constitutes a wide variety of creative materializations, from living vegetation contained to pots and vines climbing up gallery walls to soil and dead detritus scattered on museum floors. Works of plant-art might be cultivated solely for ornamentation, environmental education, or for visitors to consume through touch, taste, sound, or smell. Plant studies scholar and art historian Aloi (2018) notes that plants "challenge the institutional worship for order, purity and fixity" through "silent and dissident roles...bending [museums'] modernist soul well past the axis of anthropocentrism" (p. 5). Despite their potential conservation threats and risks of contamination, the diverse, lively multispecies matters that comprise plant-art have the potential to be a profound destabilizing political and cultural aesthetic force, troubling boundaries between inside and outdoor worlds while also seeding new power relations of care and responsibility to be present and kept alive through their botanical transgressions.

What happens when the museum gallery becomes a garden? The following survey of four case studies in contemporary plant-art — Gilberto Esparza's sculpture Plantas Autofotosinthéticas (2013-14) in the group exhibition Symbionts: Contemporary Artists and the Biosphere at MIT's List Visual Arts Center; Michael Wang's 2019 installation Extinct in New York at the Lower Manhattan Cultural Council's Arts Center on Governors Island; Precious Okoyomon's installation To See The Earth Before the End of the World for the 2022 Venice Biennale; and Daniel Lie's 2022 sculptural installation *Unnamed Entities* at the New Museum will explore the role of plants in the live production of these works through their growth and subsequent decay in the gallery, as well as the display strategies and adaptations to botanical safety protocols these institutions employed in order to fully realize each artist's ecological vision. Bound to their respective temporal and spatial parameters, each of these works of plant-art demonstrates a different kind of affective visitor experience determined by their containment or their ability to grow freely in the gallery, whether or not the institution has been instructed by the artist to sustain the life of these plants or to let these botanical entities complete their life cycle. As the work's maintenance (or lack thereof) is incorporated into its dynamic visual presentation, these botanical sculptures and installations become living embodiments of entangled environmental, political, and social narratives that bridge the human and non-human world. This diverse array of artworks shows the many ways in which centering plants as subjects, symbols, and creative collaborators can offer unique opportunities for profound engagements with histories of queer expression, colonial violence, species extinction, and manmade pollution that emphasize interconnected care and multispecies world-building. Each of these case studies not only opens up theoretical considerations for the role of museum-goers in interactive

¹ Karpouzou and Zampaki (2023) show more on this entangled 'symbiotic turn' in narratives of more-than-human agency, epistemology, subjectivity, and relationality.

live plant displays, but also offers practical insights into emerging forms of ecologically minded museum practice that embrace the maintenance demands of stewarding subjects whose dynamic existence takes root in, rots, and soils the white cube.

2 Gilberto Esparza's Mechanized Botany

It is impossible to discuss Gilberto Esparza's 2013-2014 sculpture Plantas Autofotosinthéticas without first providing a detailed description of its form. Like something out of a science fiction story, the sculpture's suspended "hydraulic network...consists of twelve microbial fuel cell (MFC) towers that filter local wastewater into a central nucleus where living organisms, such as protozoans, crustaceans, microalgae, and aquatic plants, are sustained by this closed system's operations" (MIT List Visual Arts Center, 2022, p. 4). Esparza's self-sustaining ecosystem has a two-fold support system; firstly, it is fed wastewater collected from treatment facilities across Boston, which is "harvested" and consumed by the MFC towers; then, the MFCs, "a type of biochemical technology using bacteria to produce an electric current," convert the sewage into energy that produces "flashes of light" to simulate the process of photosynthesis that "sustains the plants in the central aquarium" (p. 4). Visitors can observe the bioelectrical activity generated by each tower through a monitoring station across from the sculpture that records chemical data in real time (p. 4).

In the catalog entry for this work, Symbionts's curator Caroline A. Jones (2022) notes that "acts of bioremediation that break down human sewage are usually hidden in 'digesters' on distant islands or buried underground in septic tanks" (p. 102). Esparza's botanical cyborg reveals those invisible processes, drawing our attention to the complex waste management systems that underlie our urban infrastructure. This experiment demonstrates the tremendous exertions of biochemical energy needed to maintain this aquabotanic life system. Jones observes that Esparza's "title for this installation connects 'plants,' as in vegetal producers, to the 'plants' of industry that generate electricity and make things" (p. 102). As explorations for renewable energy sources and debates over cleaning up pollution ensue, Esparza's auto-photosynthetic project proposes that plants be transformed into agents of environmental remediation. The plants' need for nutrients, sourced from organic waste and synthesized artificial light, enters into a mutualistic relationship with humanity's need for sustainable waste management.

One might expect that this self-sustaining marvel of biotechnical engineering would require little maintenance beyond its initial installation. Yet, Plantas Autofotosinthéticas required tremendous support from a team of exhibition preparators and gallery workers to manage its production, installation, and display. Each work from Esparza's series of auto-photosynthetic sculptures has to be designed and assembled in situ, based on the aquatic materials specific to the local ecosystem. Archival footage shown in the gallery reveals an extensive research process as Esparza traveled to different water treatment sites around Boston to collect water samples and document aquatic species native to the area.³ Another film shows the challenging installation process as art handlers dressed in white lab coats, gloves, and goggles meticulously mount, wire, and fill the towers and nucleus with plants, bacteria, and wastewater.⁴ During the show, gallery attendants were stationed around the sculpture to warn visitors about cables on the ground and to enforce a safe distance from the piece's delicate electrical components. Esparza's sculpture is activated not only by internal mechanics, but also by the labor of workers and the visitor who, positioned at the monitoring station, takes on the role of scientist and engineer as they observe incoming data, watch the flashing lights, and hear the crackling hum of electricity. Successfully maintaining Esparza's energy-generating system of mechanized botany requires a precise collaborative attunement to the aquatic plants' evolutionary adaptations.

² The following observations were from the author's visit to the List Visual Arts Center on November 5, 2022.

³ This film is not credited in the gallery or any exhibition materials. Although not considered official artworks in the show, the clips appear to be sourced from the List Visual Art Center's own exhibition documentation archives.

⁴ From the List Visual Art Center's exhibition documentation archives. Also in the gallery display with no formal credits.

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Autofotosinthéticas's form recalls the "in vitro linkage between experimental science and the conservatories of art" seen in the historical development of aquariums and viva as sites of species observation and control (Jones et al., 2022, p. 18). Yet, Esparza's work of mechanized plant-art invites a more nuanced attention to the responsive self-contained dynamics of botanical symbiosis and homeostasis. Esparza creates a cyborgian type of plant-art, rendering the act of gardening uncanny with wastewater feeding the growing greens instead of soil and compost. Through a deconstructed aquatic suspension resembling cellular structures and neural networks, he unsettles the conventions of plant display to reveal remediative cycles of botanical sustenance and bioremediation that often go unnoticed by our human perception. Echoing Giovanni Aloi's reflections on "plant-being," Esparza's botanical sculpture "demands the will to change in the way in which we look, the way in which we occupy space and time, and most importantly it entirely reconfigures our cognitive rhythms in order to reconnect us with biosystems through new modalities" (2018, p. xxxii). Plants and machines operate in tandem, responding to their respective environments in order to perpetuate this enclosed experiment of regenerative life.

3 Michael Wang's Botanical Decolonization

Measuring the extent of New York City's loss of native biodiversity after centuries of colonization, industrialization, and land development is an incalculable task, yet Michael Wang's 2019 installation Extinct in New York attempts to visualize this history of ecological decimation by transforming Lower Manhattan Cultural Council's gallery on Governors Island into a greenhouse repository. Prior to the exhibition's opening, Wang spent months sourcing and tending to a selection of plants, algae, and lichen that are meant to represent the thousands of native species that "are known historically from New York City but are no longer found growing in the wild in any of the city's five boroughs" (Wang, 2019, p. 5). Because these plants are considered extinct in their original ecosystems, either because of invasives brought in by urban expansion or buried under construction, Wang had to grow these former natives in his upstate studio before transplanting them into the gallery (LMCC, 2019). Once they arrived at their artificial home on Governors Island, the plants were monitored by a team of LMCC staff, local students, and volunteers to ensure their survival for the exhibition's entire duration (LMCC, 2019). The gallery became akin to a laboratory for a community-led experiment in the possibility of restoring species that have faced historic environmental destruction. The plants' lives persisted past the show's closure, however. Wang (2019) instructed LMCC staff to distribute the plants into local community gardens and managed green spaces, introducing them back into the human-managed remains of their old native habitats (p. 4).

From its conceptual development to its realization by the museum, Wang's project invites two different, yet related, points of reflection: botanical (de)colonization and thinking with care. In their discussion of native plant advocacy, scholars Mastnak et al. (2014) define botanical colonization as a "biotic upheaval caused by settler colonialism in the context of a broader remaking of relations among humans, plants, and place" (p. 364). These transformations of local ecologies result in the "literal planting and displanting of peoples, animals, and plants," that entangle the botanical with human social, economic, and political histories (Mastnak et al., 2014, p. 367). Through its acts of replanting, Extinct in New York links native species loss to the city's fraught colonial and industrial history, in which both land and people were subjected to exploitation, displacement, and exposure to environmental hazards and nonnative species that decimated local biodiversity. In his description of the exhibition brochure, Wang (2019) writes, "this is not a project of restoration or rewilding," but rather a "homecoming on life support" (p. 5). The recognition that these environmental changes have left permanent impacts on the city's landscape echoes Mastnak, Elyachar, and Boellstorff's acknowledgement that "there is no return to the precolonial environment" since we still live with botanical colonization's legacy (p. 370). What does it mean, then, to engage in botanical decolonization? Art historian Demos (2015) writes that decolonizing nature means "the cancellation of this subject-object relation between humans and the environment" and "the absolution of the multiple levels of violence that mediate the relation of human power" (p. 15). Artist Alves (2017) writes, "a process of decolonization must begin on the ground," rejecting an emphasis on pure recreations of long-gone landscapes in favor of acknowledging the "accumulations and processes between different beings" that constitute these "landscapes of violence." Both of these perspectives manifest in Wang's plant-art project of imperfect conservation and life made possible only by human support.

Ecofeminist scholar María Puig de la Bellacasa's notion of "thinking with care" places the experience of gaining knowledge in the "manifold range of doings needed to create, hold together, and sustain life and continue its diverseness" (2017, pp. 69-70). Thinking with care doesn't just enable us to connect the gallery's maintenance of the installation to Wang's interest in recovering and decolonizing socio-botanical histories; we can see how notions of care impact visitors' experiences with the work. Like Esparza's encased biosphere, Extinct in New York keeps its plants in containment. For Wang, the greenhouse signals literal and symbolic protection by supporting the displaced plants' survival through controlled environments. Wang did not want the plants to be entirely sealed off from the public, so he used clear acrylic enclosures and left the doors open to create a "display case" (Brown, 2019). At a managed distance, viewers can peer into the greenhouses and watch the specimens float in "vitrines filled with mysterious gray-green growing medium" without risking accidental harm (Brown, 2019). While the plants are mostly kept away from direct human contact, Wang finds other ways for visitors to bridge the distance between plants and people. Displays around the greenhouses featured archival documents, photographs, and drawings of these chosen species, enabling visitors to connect these narratives to a larger story of gradual ecological decline (LMCC, 2019). While it may seem counterintuitive to mediate these plants through the human gaze of scientific study and commodification, Wang's supplementary materials show how these species' fates are entwined in the legacy of human development. The experience of studying the live plants and their historical counterparts in the gallery evoke parallels between the fondness of plants in the past and today's scientific and cultural botanical fascination. In his study of botanical contemporary art, Aloi (2019) writes, "the boundary, and its precariousness, effectively is the essence of the garden as an epistemological space... the garden is a perimeter internally fragmented... inscribing different ideologies of purity, order, and truth" (p. 110). This sense of cultivated containment also extends to the greenhouse, where its artificial construction evokes images of colonial trade, commercial agriculture, sociopolitical displacement, and industry, symbolizing how these centuries-old and contemporary dynamics between plants and animals are "determining economies of care, regimes of sustenance, production of wealth, and inscribing power and economic value" (p. 33). Wang's installation lacks the familiar comforts of grass beds and soil, embracing instead translucent lab-like sterility to show the toll of centuries-old colonial and industrial violence through an assortment of formerly-native plants now reliant on man-made living conditions to survive. Extinct in New York doesn't seek an impossible return to the past; rather this plant-art project creates space for a caring, ecologically thoughtful present.

4 Precious Okoyomon's Botanical World-Building

For the 2022 Venice Biennale, Precious Okoyomon filled the Arsenale exhibition space with an expansive topographical installation of kudzu, crops of sugarcane cane, streams of water, and a series of grand life-size sculptures made from yarn, wool, and blood (Weisburg, 2022). Walk through the work's winding dirt paths among the overgrown vines, and you may see snails, catch a glimpse of blooming wildflowers, or watch butterflies fly across the earthy expanse. Okoyomon is no stranger to working with living plants to create large-scale immersive installations, yet To See The Earth Before the End of the World has been their most ambitious project to date, bringing together threads of violent racial histories and non-human collaborations explored throughout their creative practice into this site of interactive ecological storytelling.

Biennale curatorial researcher Weisburg (2022) writes that "for Okoymon, nature is inseparable from the historical marks of colonization and enslavement." This is best seen in Okoyomon's repeated use of kudzu as their primary botanical collaborator. Now considered a highly invasive weed that has decimated the American South, kudzu was first introduced to the continent from Asia in the nineteenth century as a way to stop soil erosion and degradation caused by the excessive cultivation of cotton on plantations (Weisburg, 2022). While kudzu has garnered such a negative connotation, Okoyomon sees the species as a sympathetic protagonist and

as an opportunity to incite anti-colonial resistance by embracing a plant that came forcibly by colonial trade routes and remained resilient despite its othering. "Like Blackness itself," Okoyomon tells us, "kudzu is both indispensable to and irreconcilable with Western civilization" (Das, 2021). Okoyomon's ecological provocations recall Brown's (2021) notion of "Black ecologies" wherein "the rights of nature and human rights must be won ecologically, in solidarity, as kin" as "the Black body [travels] on tides of cellular memory and seed the gaps between worlds." Black ecologies make those human-plant connections explicit and seek to heal generations of antiblack violence and environmental trauma. Okoyomon's kudzu project also ties back to Puig de la Bellacasa's views of ecological care as "a captivating terrain to engage with the intricate entanglements of material necessities, affective intensities, and ethico–political troubles of caring obligations" (2017, p. 169). As Puig de la Bellacasa (2017) calls on these "alternative arrangements" to "not only evoke a different mode of production but a different mode of life" (p. 200), so too Okoyomon states that "the human has nothing left for us: the human can only reproduce the same thing it always already has. We need a new modality of being" (Wilk, 2022). To See The Earth Before the End of the World is a radical act of botanical world-building.

Interestingly, reviewers who experienced Okoyomon's installation in-person could not agree on the extent of the installation's wildness. In *The Art Newspaper*, Luke (2022) writes that "over the course of the Biennale. Okoyomon's kudzu will also grow uncontrollably, and reclaim the installation for itself." Meanwhile, Greenberger (2022) at ARTnews noted that kudzu's "growth at the Biennale is likely contained, [although] one could imagine a context in which it were not." The Biennale's own description of the project makes no mention of any additional maintenance that went into managing the work, naming it only "a field wild of growth" (Weisburg, 2022). One can infer that, like Okoyomon's previous iterations of this invasive plant-art, their botanical partner was left to flourish freely and unpredictably with little to no human intervention. Visitors were allowed to tactically engage with Okoyomon's budding landscape either through contact with foliage or by walking over soil scattered on the paths, and they could likewise engage their other senses by inhaling the fresh air, or by listening to the sounds of music and running water (Wilk, 2022). Viewers bore witness to the kudzu's creative transformation of the space over the Biennale's duration, yet they also experienced other timescales from non-human actors, such as seeing how Okoyomon's butterflies grew, died, and reproduced in several cycles throughout the show. Aloi (2019) reminds us that "although at first glance it might seem that the human is the sole operator of agency, more careful consideration can reveal that the nonhuman always poses a form of resistance of some sort, or that, in not very obvious ways, the nonhuman responds to the disciplining of domestication with subtler forms of re-wilding" (p. 33). As To See The Earth Before the End of the World's plants, soils, and insects flourished and decayed in curated symbiotic co-existence, they turned the Arsenale into an unruly space where vegetation like kudzu garnered renewed attention and reverence for its subversive ecological force, rather than being reviled for its defiance of human domestication. Since the Biennale's end, no reports have emerged about kudzu's spread beyond the gallery walls, indicating that Okoyomon's experiential embrace of the invasive was safely executed.

5 Daniel Lie's Queer Decay

Equally wild and multisensory, Daniel Lie's sculptural installation *Unnamed Entities* brought plants, soil, and decay into the New Museum's lobby. Lie constructed monumental forms from a biodegradable composition of terracotta, jute hem fabric, natural fiber ropes, hay bales, mud inoculated with seeds and spores, and thousands of yellow chrysanthemums hung around the gallery (New Museum, 2022). Over the course of the exhibition, these living materials transformed the space through overlapping life cycles of sprouting and rotting. The work's title references the non-human beings that aided in the realization of the piece — bacteria, fungi, minerals, and root systems — whose mutative powers are not always visible to the human eye. In a

⁵ In this interview, Okoyomon also notes that, due to its illegal status and regulation in the US, they can only exhibit their installations made of kudzu in Europe.

letter to the artist, curator López (2022) asked: "What does it mean for the rules of authorship that the works are not made by you alone but in collaboration with millions of nameless organisms? What or whom does your art represent? How do your living entities modify the physical movements, the security norms, and the pace of the work habits in the institution they occupy?" (p. 5). While Lie has laid the ecological foundation, it is ultimately up to Lie's community of multispecies agents to enact the work's germination and decomposition.

Lie's practice of using living plants and their microbial counterparts comes from an interest in queer ecology. This burgeoning field of ecocritical thought "probe[s] the intersections of sex and nature with an eye to developing a sexual politics that more clearly includes considerations of the natural world and its biosocial constitution" (Mortimer-Sandilands & Erickson, 2010, p. 5). Lie's self-identification as a non-binary person parallels nature's inability to conform to human social categories, hierarchies, and systems of normative behaviors. Like the exploration of one's identity, Unnamed Entities's botanical processes of living and dying are ever-evolving, "leading human time astray" through indeterminate materializations of multispecies temporal rhythms that disrupt predictable ecological lifecycles (López, 2022, p. 4). While queer ecological thought tends to locate these experiences with nature in the far-off wild, scholar Castro (2019) argues that post-natural spaces provide opportunities for queer human-plant kinships that grapple "with the culturally constructed dimension of what we understand the 'natural' and 'nature' to be" while also "push[ing] forward the boundaries of our thinking about ourselves in relation to all the meaningful others who share the world with us." Lie's manifestation of queer ecology brings the botanical into the constructed urban and cultural fabric, transmuting the pristine gallery into a site of diverse metabolic activity.

Compared to the other case studies, Unnamed Entities offered the richest, and messiest, form of intimate sensory engagement. The museum did not clean up any of the decaying plant matter. The organic smell of the sculpture grew stronger as the materials began to rot.⁶ Visitors were left unattended to walk around and through the sculpture, leading many to sneak a touch of wet earth, pocket a fallen flower, or get so close to the work that their footprints were left behind in the scattered soil. While the piece was left unmaintained, this did not mean that the work lacked safety concerns. Conservator Finne (2013) notes, "soil harbors a whole community of tiny creatures, including fungi, bacteria, and protozoa," incurring serious risks of pest infestation or mold outbreaks that the museum in part mitigated through placing the work in a standalone gallery away from other works (p. 4). Lie, however, invites viewers to think about decay beyond its damaging potential. In their 2021 essay "Rotten Energy, Spaces with Consciousness," Lie writes rot is a form of activation, that "decay can be used as a portal [to] break human concepts that trap us in rejecting ways that our own selves have a path of expansion into the environment" (Lie, 2021, p. 308). Expansion, in this context, refers not to acts of humancentric domination, but rather to embracing new forms of cohabitation in a web of entangled interspecies relationships. As viewers bear witness to the material transformations of these complex ecobiological life cycles spanning the botanical and the microbial, Lie's sculpture enacts what Michael Marder describes as "vegetal heterotemporality," a "time of its other" influencing stages of plant life through climatological, meteorological, seasonal, human and nonhuman interventions on its environmental condition (Aloi, 2018, p. 20). Through these metabolic activities, Lie's plant and human participants embody pluralisms of genders, sexualities, spatio-temporalities, and aesthetics. Whether visitors encounter Unnamed Entities through touching, seeing, or smelling the installation, these moments of contact with Lie's nonhuman co-artists invite viewers to join in a shared experience of living, dying, and decomposing.

6 Conclusion

Each of these contemporary case studies breaks, in one form or another, museums' protocols of proper botanical display. Where best practices call for sterile environments, regular cleaning, and control over visitors' movement, these works of plant-art choose to embrace the dirtying of the white cube with greenery

⁶ The following observations are from the author's visit to The New Museum both in February and in May 2022.

and soil, fallen leaves left to decay, wayward meanderings, and the risks of potentially hazardous materials. Esparza, Wang, Okoyomon, and Lie approach plant-art's non-human collaborative ethos through a range of strategies for containment and cultivate, transforming their botanical subjects into muses, mediators, and co-authors to tell stories about the way the natural world and the climate crisis intersect with socio-political histories of racial violence, colonization, pollution, extinction, and queer identity formation. These artworks offer a myriad of educationally enriching, affective experiences through touch, smell, and sound to shape visitors' engagements with non-human actors in the gallery. Each of these works has inherently unpredictable outcomes once they go on display, shaped by factors such as temperature control, growing mediums, and human interaction.

Currently, museum guidelines regarding the use of plants in galleries only cover potential situations for cut flowers and potted plants, not immersive environmental installations or technically demanding sculptures (Finne, 2013, p. 3). As the display of plant-art and other biologically-based artworks grows in frequency, these case studies offer insights into ways museums can develop new adaptations that balance visitor and museum safety with the artist's creative vision. Esparza, Wang, and Okoyomon's projects underscore the need for thoughtful maintenance, supplemented with adequate staffing to handle both installation and ongoing gallery monitoring. Esparza and Wang draw our attention to the need for additional care in maintaining safe, life-supporting systems of display and enclosure. Lie and Okoyomon invite us to consider less manicured museum displays that leave plants to freely grow and decay. Overall, these plant-based works – and their artists' instructions for care (or lack thereof) – were ambitious experiments in botanical art-making. Their successful realization facilitated new opportunities for museum staff to develop better alternative practices to current standards of plant management in galleries, modes of operation that don't prioritize exhaustively homeostatic conservation but rather embrace fluctuating, less-predictable institutional needs for additional maintenance labor, resource allocation, careful planning, and cooperation with artists.

As we look to the future, it is clear that museums will continue to become sites for displaying hybrid, multimedia artworks whose material contents bridge technological innovation with organic matter. Although her research centers on abandoned buildings and ruins, scholar Caitlin DeSilvey's work in evolving heritage preservation practices offers a potential way forward in constructing an ecological museum ethos. DeSilvey (2017) calls for greater acknowledgement of decay's inevitability, that preservationists choose at times not to intervene, and that remembrance should be dynamic, not tied so closely to the pristine condition of an object (pp. 4–6). "We need to find ways to inhabit change rather than deny or deflect it," she writes, "and to find meaning in transition, transience, and uncertainty" (p. 16). Even if museums are not yet prepared for complete nonintervention, DeSilvey's urge to deprioritize repair and embrace objects' innate lifespans has implications beyond working with plant materials alone.

Whereas plants and their symbiotic partners were once considered potential contaminants and subjects of extensive risk pest infestation management, these developments in the experience and display of plant-art create an opportunity for museum workers to coexist with these living organisms rather than drive them out of the gallery. These pieces of plant-art are not designed to be collected and held in storage to live and rot outside of public view. To place decay at the center of a display means embracing challenges to the museum's procedural order, a disruption in the ways artworks are cared for and categorized, a challenge to habits of museum-goers, and a reconsideration of authorship as plants exert their non-human artistry. The gallery can not only become a garden, but grow into something more.

Acknowledgements: Many thanks to my faculty advisor Dr. Camille Mary-Sharp, whose insights into climate museology planted the seeds for this research exploration.

Funding information: The author states no funding is involved.

Author contribution: The author confirms the sole responsibility for the conception of the study, presented results, and manuscript preparation.

Conflict of interest: The author states no conflict of interest.

Data availability statement: Data sharing is not applicable to this article as no datasets were generated or analysed during the current study.

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