



Encyclopedia of Aesthetics (2 ed.)

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Publisher: Oxford University Press

Print ISBN-13: 9780199747108

Current Online Version: 2014

Print Publication Date: 2014

Published online: 2014

eISBN: 9780199747115

Eco-Art and Criticism.

Eco-art is a genre of intermedia practice that emerged in the 1960s in response to the scientific, political, and aesthetic dimensions of ecology.

Though Eco-art is frequently categorized alongside Earth art (also known as Land art or Environmental art), a number of essential distinctions have defined its independent evolution over the course of the late twentieth and early twenty-first centuries. The latter emerged out of postminimalism and aimed to relocate art outside the gallery system, often to deserted landscapes or abandoned industrial sites in its early years, eventually expanding to public places, urban sites, and sculpture parks. Existing as a hybrid between sculpture, landscape architecture, and monuments, Earth art is pitched at a scale that will engulf the spectator and radicalize the phenomenological experience of the artwork by opening its parameters to the environment's irreducible elements: vast sky, unyielding earth, tides, solstices and equinoxes, lightning, and so forth. By contrast, Eco-art derives from the scientific paradigm of "the ecosystem" by which all life and natural activity is understood as a symbiotic organization.

Eco-art thus patterned itself on systems theory as it was developed in the biological sciences by figures such as Humberto Maturana and Francisco Varela, who spearheaded the concept of autopoiesis, and environmental science, as it was defined by James Lovelock known for his *Gaia* hypothesis, as well as on the field of cybernetics by figures such as social scientist Gregory Bateson, who wrote the influential book *Steps to an Ecology of Mind* in 1972.

Eco-art was also influenced by the environmentalist movement, which brought an ecological consciousness to bear on government policy, scientific research, and cultural life. In its early decades, Eco-art aimed to reinvent the role of the artist and the concept of the artwork in ways that would undo the boundaries between art and life, that would make living systems visible, that would respond to principles of sustainable living, and that would restore biodiversity to sites that had been damaged due to environmental negligence. Many Eco-art projects responded to contentious political issues such as the use of DDT, corporate agriculture monopolies, nuclear testing, and toxic dumping. These topics had gained public attention with the publication of Rachel Carson's *Silent Spring* in 1962, and they constituted key issues of protest and activism in the 1960s. In the 1960s and 1970s, these grassroots protests inspired artists, writers, and theorists to imagine alternative lifestyles subtended by localized sustainable communities, a do-it-yourself work ethic, and technological development

in the service of planetary stewardship. While Eco-art was influenced by the ethos of these countercultural ideals, in the decades of the late twentieth and early twenty-first centuries, the intertwined challenges of global capitalism and climate change have called for new strategies by which to represent and respond to the magnitude of ecological crisis. Eco-art has expanded its sphere of aesthetic consideration to account for theoretical redefinitions of nature, the scale of human impact on the planet, and the conflicted terrain of environmentalist interventions.



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Water, Selected (detail), 2007, Roni Horn. Twenty-four floor-to-ceiling glass columns (12 in. dia x 118 in. each), filled with water taken from a unique glacial source in Iceland, permanently sited at Vatnasafn / Library of Water.

COURTESY OF RONI HORN STUDIO

Art as System.

In North America in the 1960s and 1970s, many artists reconceptualized the primary conditions and assumptions about artistic production with a view to foreclosing the commodification of the artwork and connecting the controlled and exclusive modernist institution to practices and experiences of everyday life. Thus movements such as conceptual art, performance and body art, site-specific art, and other intermedia practices all developed strategies by which to overcome the demand for an aesthetic object that could be bought, sold, circulated, and appreciated as a discrete commodity. Instead, artists conceived of instructions, practices, actions, and interventions in which the parameters of the artwork were defined by a specific place and limited time frame, so that the artwork could not be extracted from its context and enter into economic circulation. The particularity of the spatial and temporal parameters of the artwork was seen as an encumbrance to its exchange value. Eco-art was born of this drive to integrate art into new contexts of experience. However, it was pitched in a more particular way to discovering how the parameters of the artwork could be defined by the activity of a living ecosystem. Thus the artwork would be articulated in and through the divisions, junctures, input, and output between a self-enclosed organism and its broader environment.

The early work of Hans Haacke exemplifies this kind of redefinition of art as ecological circuitry. His condensation boxes of the mid-1960s, for example, transformed the discrete art object into a transient entity that reveals the otherwise invisible natural activity that

surrounds it. Haacke constructed transparent Plexiglas cubes with a small amount of water inside them. The water evaporated and then eventually condensed in drops and rivulets along the side of the cubes. In this way, the cubes encompassed Haacke's directive: "Make something which experiences, reacts to its environment, changes, is nonstable ... something sensitive to light and temperature changes... Make something that lives in time and makes the 'spectator' experience time... Articulate something natural" (1967, p. 8). Eco-art therefore did not simply evidence the systemic interplay between an entity and its environment, it foregrounded an aesthetic experience of the passage of time as the artwork was gradually transformed by protracted natural processes.

While Haacke's condensation boxes built the artwork into a contingent relationship with atmospheric conditions, artists in subsequent decades have staged ever more complex networks of ecological relations, thereby showing how natural life occurs within larger cycles of generation, growth, change, and decomposition. Mark Dion's *Neukom Vivarium*, a greenhouse at the Olympic Sculpture Park in Seattle that encloses a nearly eighty-foot fallen hemlock tree is one such endeavor. The decomposing tree serves as the nutritive ground for a proliferation of insects, plants, fungi, and single-cell organisms. The work therefore exemplifies the symbiosis of life forms in an ecosystem. However, Dion's work is also a political reflection on the fact that an ecological consciousness is always mediated by a scientific, technological, and economic framework, and such work is also often accompanied by an awareness of the fragility of environmental balance. The artist describes the work as a life-support system: a fabricated environment that attempts to replicate the conditions of old-growth forest but that, despite all the money, labor, and technology that is put to the task, can never reproduce the intricacy of that naturally occurring system.

Art as Information and Intervention.

Both Dion and Haacke's work show the roots of Eco-art in a scientific paradigm, and one might even say that the genre advances an aesthetic of the laboratory, not only because they simulate ecosystems in relatively controlled conditions, but also because they do so with a view to making natural processes visible and available as information. Indeed, the pioneering works of Newton and Helen Mayer Harrison were initially designated "Technological art," by the renowned critic Jack Burnham because they were premised on scientific methods of experimenting with natural processes in order to produce new technologies of ecological management. For example, their early *Survival Pieces* (1971–1974) displayed sustainable food-growth systems in exhibitions and galleries (*Portable Orchard*, *Portable Fish Farm*, and *Full Farm* were among the works in the series). But these works did not simply air the machinations of ecosystems as much as they served as proposals for small-scale communal agriculture and, thus, as alternatives to the spread of big agro-business in the United States. In addition to the installation of free-standing food systems, these artworks also involved the production of instructional manuals patterned on serials, such as Stewart Brand's *Whole Earth Catalog* (1968–1972) and *Popular Mechanics*. This format suited the imperative of Eco-art to make information readily available to a diverse public and therefore deploying the artwork as a form of social practice.

As the work of the Harrisons has developed into ever more ambitious projects of site restoration, species repopulation, and techniques of gauging and representing the effects of global warming, it has become clear that scientific experimentation and data collection are part of the modus operandi of Eco-art, and that the production of an ecological perspective yields new aesthetic terms. Their ten-year *Lagoon Cycle* (1974–1984), for example, was geared toward restoring the precarious estuary habitat of a Sri Lankan crab, a process that could be undertaken only through careful study of the crab's behavior over several generations. Their study of the estuary, however, led to a wider interrogation of the greenhouse effect and the place of the estuary in a larger global scheme of climate change. Importantly, the Harrisons did not espouse a singular, neutral scientific voice; rather, they delivered their findings through dramatic dialogue, drawings, journal entries, instructions, and poetry assembled in a catalogue. This information would also be reformulated into installations composed of maps, recordings, and images that emphasize the procedures and aesthetic sensibility required for ecological observation.

A key aspect of this information-based model of Eco-art is an appreciation of biodiversity as an inherently valuable quality of ecosystems. Thus the mapping and surveillance of a site poses the challenge of representing a web of interconnections between human activity,

species of animal and plant life, and fluctuations of climate, atmosphere, soil quality, and water levels. These interconnections attest not only to the codependency of species within a system, but also to the fact that the organisms and the systems they inhabit are bound up in a feedback system that generates a buildup of complexity. In this way, the public restoration works undertaken by many Eco-artists translate the biodiversity of a site into perceptual information by leading the viewer to a heightened awareness of the forms of life that shape an environment. Moreover, restoration projects are frequently commissioned to address ecological problems that have escaped the jurisdiction of funded scientific research, existing techniques of restoration, and local or national government policy.

The urban site restorations of Patricia Johanson, such as *Fair Park Lagoon* in Dallas, Texas (1981–1986), *Endangered Garden* at Candlestick Cove in San Francisco Bay (1987–1997), and *Petaluma Wetlands Park* (2001–2005) fall into this category of practice. These particular works are designed as meandering walkways that proceed through microhabitats and which allow visitors to witness the recovery and proliferation of life in areas that were previously degraded and neglected. Johanson's projects, like many restoration works, are interdisciplinary in nature, requiring skills in landscape design, engineering, and urban planning. Yet where design is frequently intended for functionality and thus a harmonious integration of artistic structures and environment, Johanson's works foreground the environmental challenges that underlie a site to reveal the unseen life that teems within it. *Endangered Garden*, for example, was commissioned by the Department of Public Works due to charges from the Environmental Protection Agency that the city was pumping raw sewage into San Francisco Bay. In addition to returning the site to a habitable environment for the many endangered species of plants and animals that had vanished from the area, Johanson devised sculptural protrusions, landforms, and tidal pools that hone the senses to the minute forms of life and broader geological formations and patterns that shape the species that dwell in the area. The restoration work therefore mediates an experience of both the microcosmic and macrocosmic dimensions of the ecosystem.

The bridging of two modes of representation—the presentation of ecological information and a training of the sensorial experience—also signals how Eco-art mobilizes what the cognitive psychologist James J. Gibson has called “ecological perception.” Undertaken between the 1950s and 1970s, Gibson's research posited that all perception is mediated through an environmental fabric. He developed a model of perception by which he theorized that all animals, including humans, perceive the coextensiveness of themselves and other entities within a living and changing environmental niche. Thus perception takes place through a continuous sampling of sensorial information from the ambient surrounding in an “ecology,” a term that he interprets to mean a constellation of objective conditions as well as mobile sensual effects that constitute the perception of the environment. Eco-art effectively brings Gibson's understanding of sensorial perceptions as ecological information, and the viewing subject as one that is integrated within an ecosystem, to bear on the phenomenological experience of art. Indeed, it makes the bodily experience of the environment a key strategy by which to cultivate an ecological consciousness.

German artist Mariele Neudecker considers this coextensiveness in her sculpture-based work *400 Thousand Generations*. Inspired by a study that showed how the microfibers of the retina have taken four hundred thousand years of environmental adaptation to evolve into the contemporary human eye, Neudecker constructed a pair of glass spheres that house what appears to be a microcosm of a cloudy mountain range. Filled with white solution that simulates the thick layer of mist, and containing a fiberglass mold of blue mountain peaks, the sculptures curiously resemble a pair of eyes in which the mountains double as the fibrous tissue of the retina. In this way, the artist shows the inextricability of vision, the morphology of the human body, and the ecosystem.

Geoesthetics and Sites of Time.

While Gibson's model of perception primarily addresses the parameters of the body's perceptual field, nevertheless, many examples of Eco-art can be identified that aim to jar the viewer from a human-centered spatial and temporal frame of reference. This is especially true of artworks that generate a sense of geological time, namely, cycles of planetary transformation that span millions of years and which preceded human life. These works can be said to advance a “geoesthetics.” In its proposition of a timescale that radically exceeds human life and is potentially limitless, geoesthetics draws from the tradition of the sublime. However, in practice, Eco-art does not necessarily set a planetary scale against the human imagination; rather, it cultivates a sense of the tempo and multiple temporal layers of natural life.

Alan Sonfist's *Time Landscape*, initiated in 1965, is an example of an artwork that imagines natural life before the impact of modern Europeans. Sonfist took over a rectangular plot of land on the intersection of West Houston Street and La Guardia Place in Greenwich Village, Manhattan, and restored it to its precolonial state. Sonfist planted it with grasses, shrubs, and trees that originally populated Manhattan and eventually it grew into a forest that approximates its native condition. *Time Landscape* not only contrasted the modern city with its premodern condition, but it also set the tempo of urban life into relief against the slow and imperceptible tempo of natural growth.

An alternative historical perspective of planetary change has been crucial for ecology and other biological sciences because the environmental damage caused by humans does not immediately create perceivable changes in the planet's ecosystems and only becomes evident over time. Thus, many scientists, artists, and cultural theorists alike hypothesize the condition of the planet in its prehistory and posthistory in an attempt to gauge the mark of modern humans. For example, the recent designation of a new geological era, the "Anthropocene," a term coined by the ecologist Eugene Stoermer, characterizes the irrevocable planetary transformations that have taken place since the Industrial Revolution, specifically, species extinction, a sharp rise in carbon dioxide in the atmosphere, and toxins left by nuclear testing. The planetary scale of ecological change has inspired artworks that imagine geological activity beyond an anthropocentric perspective and human activity from a geological perspective.

Roni Horn's *Library of Water* (2007–ongoing), an installation in a converted library overlooking the ocean in the village of Stykkishólmur, Iceland, demonstrates this precise link between geoaesthetics and environmental crisis. The installation responds to the issue of melting glaciers caused by global warming. In considering the imminent disappearance of glaciers and glacier water and the corresponding destruction of Arctic ecology, Horn created an archive of glacier water by collecting and storing samples from around the country in twenty-four life-size glass columns. In its conception, *Library of Water* anticipates a dystopian future in which the glaciers have already vanished and exist only as preserved specimens in a museum of science. However, the work also mediates a visually stunning experience of the elemental quality of the water. The columns do not yield water as a palpable substance; they present it as a transparent medium that reflects and refracts light around the room.

Eco-Art after Nature.

In the late 1990s, philosophers, theorists, and artists began to challenge the ontological status of "nature" and the viability of the concept as the basis of aesthetic experience. This approach can be traced to philosophical claims that "nature," as such, is a human construct that institutes false dichotomies between categories of phenomena and which is frequently ideologically laden with moral claims as to what is "natural." As the philosopher Graham Harman summarizes in his 2005 book *Guerilla Metaphysics*, "Nature is not natural and can never be naturalized." This line of thinking can be associated with Bruno Latour's "actor-network-theory," Jane Bennett's "vital materialism," and Timothy Morton's "dark ecology." Eco-art has therefore developed with a view to weighing the parameters of ecological aesthetics after the demise of a concept of inherent nature.

It is against this theoretical ground that Eco-art developed a sustained preoccupation with the technological frame that accompanies, and intervenes in, all life, be it elemental phenomena, genetic code, biological components such as blood and tissue, and the terms by which life as such is defined. In this vein, the installations of Berlin-based artist Olafur Eliasson situate nature in the strife between an artificial frame and irreducible elemental content. *The Weather Project* (2003), which was created in the Turbine Hall of the Tate Modern, is a work that reconstructs an exterior environment indoors. Made with a giant disc of yellow lamps to simulate a giant sun, and then using humidifiers to fill the hall with a light mist, Eliasson made a plausible simulation of weather, natural light, and atmosphere. The work not only blurred the lines between the appreciation of nature and the appreciation of art, but also recast this dichotomy as one in which the technological reproduction of nature mediates a sense of the systemic operations of an ecosystem. In similar developments, Eco-art in the twenty-first century has dovetailed with new media practices and has extended its domain of interest to include the science and visual culture of bio-art, genetics, artificial life, computer code, and robotics.

[See also ANIMAL AESTHETICS; CONCEPTUAL ART; GEOAESTHETICS; NATURE; PUBLIC ART; SCIENCE; and SUBLIME.]

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Subscriber: University of Guelph; date: 15 March 2022