HYPERALLERGIC

Art Reviews Weekend

Nature Offers the Best Designs at the Cooper Hewitt Triennial

Objects on display designed to be green substitutes for those that are ecologically harmful or failing are among the most thought-provoking in this exhibition.

Louis Bury January 11, 2020

Alexandra Daisy Ginsberg, “The Substitute” (2019), CG animation and visualization of the extinct male northern white rhino created by The Mill, with behavior based on research by DeepMind

The most indelible image in ***Nature — Cooper Hewitt Design Triennial with Cube Design Museum*** is of a CGI rhinoceros nosing around an empty virtual room with hazy, ghostwhite walls. The subject of Alexandra Daisy Ginsberg’s video “The Substitute” (2019), created by The Mill, with behavioral research by DeepMind, the heavy-lidded animal’s aimless movements appear to be the product of boredom, confusion, and sadness, as though it were a caged zoo animal or a hapless character in a Samuel Beckett play. As the rhino shuffles about, its lifelike body periodically morphs into a pixelated gray-brown abstraction, a reminder of the creature’s digital artifice, before morphing back into its realistic form.

The video responds to the 2018 passing of the last male northern white rhinoceros, Sudan, whose subspecies's near-extinction has been the focus of substantial conservation, media, and even artistic attention this past decade. Since Sudan's death, scientists have been attempting (not without controversy) to resurrect him using experimental biotechnologies. Skeptical of these *Jurassic Park*-esque experiments, Ginsberg and her collaborators conceived their virtual rhino as a different kind of artificial substitute. In particular, they programmed it to have machine-learning artificial intelligence; its AI-directed amblings, as well as its pixelated morphings, are designed, in the artists's words, to question "what errors in reproduction may arise as we recreate life artificially."

Though the Triennial as a whole doesn't share the video's same level of technological skepticism, "The Substitute" is nonetheless emblematic of *Nature* in two key ways, one iconographic, the other conceptual. Iconographically, its rhino invokes an elegiac sense of pathos akin to that of polar-bear-on-ice-floe imagery, the latter of which is pervasive to the point of cliché in environmental advocacy. But whereas such polar bear imagery conjures a disappearing natural world, the Beckettian CGI rhino conjures that world's postlapsarian digital afterlife. This computerized twist on a familiar environmentalist trope, while different in intent, is in keeping with the triennial's synthetic contents and sci-fi mood. Contrary to the greenery its title implies, *Nature* is packed with techno-scientific design collaborations that are meant to mitigate or remediate our species's environmental harms and that complicate simplistic distinctions between nature and culture.

Erez Nevi Pana, “Bleached (II)” (2018), salt-crystallized loofah over a wooden structure, 30 1/2 x 21 5/8 x 22 1/16 inches (© Friedman Benda and Erez Nevi Pana)

Conceptually, “The Substitute” exemplifies the Triennial’s preponderance of synthetic eco-design. The CGI rhino’s surrogate relationship to the late Sudan structurally resembles the relationship between the exhibition’s many eco-prototypes and the obsolescing goods those prototypes propose to replace. Numerous exhibited objects are designed to be greener substitutes for those used in parts of the world that are ecologically harmful or failing. Though the Triennial includes other kinds of work (data visualizations; sculptural installations; decorative artworks), its laboratory eco-designs leave the strongest and most thought-provoking impressions.

Examples of such designs include a carbon-negative raincoat made from a marine-algae-derived polymer (Charlotte McCurdy, “After Ancient Sunlight,” 2018); textiles made with seaweed (Julia Lohmann, Violaine Buet, and Jon Lister, “Department of Seaweed: Living Archive,” 2018-ongoing); a vessel and chisel made from lithoplast, a plastic-based industrial waste residue (Shahar Livne, “Metamorphism,” 2017-ongoing); a 3D-printed tire made from recycled and biological materials (Michelin, “Visionary Concept Tire,” 2016-19); a series of bowls, cups, and vases made from a biopolymer containing algae microorganisms (Studio Klarenbeek & Dros with Atelier Luma, “Algae Vessels,” 2018); a biodegradable body suit that assists in breaking down toxins found in human corpses (Jae Rhim Lee, “Infinity Burial Suit,” 2018-ongoing); and geometrically shaped mangrove planting pots that, as the trees mature, increase shoreline resilience (Sheng-Hung Lee, “TetraPOT 2.0 – The Evolution of Greener Sea Defense,” 2015-18).

Dozens more such speculative objects populate the exhibition, most of which offer ecological benefits over the de facto standard.

These prototypes, the fruits of extensive and ongoing interdisciplinary collaborations, are attempts to effect positive ecological change through technocratic research & development. In the popular conscience, positive ecological change is unhelpfully conceived as a matter of consumer individualism, that is, as a problem of more or less virtuous personal choice. In academic theory, positive ecological change is accurately conceived as a matter of revolutionary collectivism, that is, as a holistic problem, the only adequate solutions to which are systemic — civilizational, planetary — in scope. In its emphasis on design R&D, *Nature* calls attention to one type of environmentalist agency exercised between the extremes of drop-in-the-bucket personal choice and out-of-reach systemic overhaul.

In theory, such R&D can precipitate systemic change similar to how, over time, developments in computer technology have led to changes in civilization's infrastructure. In practice, however, its products tend to reinforce the systems that already exist and require substantial investments of time and resources for relatively modest ecological benefits. Consider, for example, "Bionic Partition" (2016-ongoing), a prototype for an airplane cabin partition whose structure is based on algorithms that mimic slime mold and mammal bone growth. Comprised of alumide, aluminum, and a glass fiber reinforced polymer, the partition has the eco-benefits of being lightweight (thus slightly reducing the plane's fuel usage) and fabricated with little waste. But greener airplane parts don't address the root ecological problem, which is air travel itself.

More than eco-designs that substitute one product or material for another, slightly better but functionally similar one (for instance, substituting "Biocement™ Masonry" [2017-ongoing] for traditional cement), what's most needed are transformations in civilization's organizational systems and infrastructures, such as new construction designed for pedestrians, cyclists, and public transport, rather than cars. Yet it feels easier to imagine a world in which airplane design has become marginally less wasteful than one in which airplane travel has been limited or outlawed on environmentalist grounds. The former — the world that many of our more conscientious scientists, engineers, and designers are at work creating — depends on the have-your-cake-and-eat-it-too assumption that the developed world's current ways of life can become sustainable with better technology. It's the workaday version of the same technological salvationism that underlies geoengineering schemes.

Hiromi Ozaki and Masaya Kushino, Another Farm, in collaboration with National Agricultural and Research Organization and Hosoo, Tranceflora (2015-2019); Sputniko!, glowing transgenic silk (photo by So Morimoto)

Nature presents profoundly mixed feelings about this design ethos. On the one hand, it showcases futuristic projects with curative potential: silk-protein screws for human surgery (Living Materials Silklab, "Catalogue of 10 Silk-Protein Derived Devices at the Interface between Technology and Life," 2019); 3D-printed bone that is gentler on the human immune system than current implants (Adam E. Jakus and Ramille Shah, "3D-Painted Hyperelastic Bone®," 2015-19); bandages inspired by slug mucus (David Mooney, Ben Freedman, and Jianyu Li, "Sea Slug Bandages," 2017-ongoing); origami-inspiredartificial organs (Chuck Hoberman, Richard Novak, Elizabeth Calamari, Sauveur Jeanty, and Donald Ingber "Origami Membrane for 3D Organ Engineering," 2018-ongoing); textiles that can grow living cells (Amy Congdon, "Tissue Engineered Textiles," 2015-ongoing). On the other hand, the gothic, sci-fi imagery of many works betrays a lack of faith in the cyborgian world such projects could engineer — for example, a spectral white gown made from glowing transgenic silk and displayed under black lights (AnotherFarm, "Fantasma," 2019) and Jorge Gamboa's widely reproduced image of a plastic bag partly submerged underwater so as to resemble an iceberg (*Plasticeberg*, 2017).

Among the exhibited works, "The Substitute" gives fullest expression to these doubts. The video portrays the attempted resurrection of a gender-extinct rhinoceros as a visual and conceptual cul-de-sac, a Theatre of the Absurd-esque dramatization of the animal's existential despair. Like the polar-bear-on-ice-floe trope, the CGI rhino implies that a particular animal species has reached a

point of no return, a state of irrevocable loss. But the latter is far more dire in that it depicts this endpoint as the result of techno-scientific attempts to effect a return. Whether or not species resurrection proves viable in real life, “The Substitute” is most powerful as an atmospheric cautionary tale rather than an absolute moral judgment. Its bleak mood conveys the sadness, more so than the wrongness, of our high-tech efforts to preserve the planet’s biophysical status quo.

Installation photo of “Nature—Cooper Hewitt Design Triennial” (photo by Matt Flynn)

And that’s why, in a Triennial packed with unfamiliar, cutting-edge material, the biggest surprise is discovering that a deep-seated nostalgia underlies many of these forward-looking design experiments. *Nature*’s two biggest statement pieces, each situated as a gateway to the museum, establish this wistful and elegiac conceptual framework. Installed in the ground floor entry room, Katharina Mischer’s and Thomas Traxler’s “Curiosity Cloud” (2015-2019) contains dozens of glass light bulbs dangling from the ceiling; inside each bulb is an artist-madeNew York insect species that noisily flutters as visitors walk past, imbuing the room with the sound and feel of an entomological deathrattle. Installed in the museum’s garden, Antón García-Abril’s and Déborah Mesa’s “Petrified River” (2018-19) consists of three large earth and concrete rocks that symbolize, longingly, Manhattan Island’s less developed pre-colonial environment.

But *Nature*’s techno-salvationist nostalgia receives its most poignant and telling articulation in yet another substitute design, “Resurrecting the Sublime” (Christina Agapakis, Alexandra Daisy Ginsberg, Sissel Tolaas, with support from IFF Inc. and Ginko Bioworks, Inc., 2018-19).

Whenever a visitor stands underneath a black hood hanging from the ceiling, the installation releases a scent that approximates the smell of an unspecified extinct flower, reconstructed through historic DNA samples. The existence of this Proustian, artificial *aide-mémoire* feels as inevitable as it does futile. The flower is gone; its manufactured posthumous scent is more uncanny than sublime. Underneath the dark hood, it smells like the inside of a funeral home, like the passage from a previous way of life into whatever we imagine comes next.

Nature — Cooper Hewitt Design Triennial with Cube Design Museum *continues at Cooper Hewitt Smithsonian Design Museum (2 E 91st Street) through January 20.*
