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BIO ART

life in the Anthropocene

post-human futures | symbiotic machines | biotech species | the plastisphere

Symbiotica | Thingworld | Gordon Bennett

BIO ART

life in the Anthropocene

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Pinar Yoldas *Altereolution* 2013. © Pinar Yoldas.



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SPECULATIVE BIOLOGY

in the practices of BioArt

■ Ingeborg Reichle

When Bio Art received much attention around the turn of the millennium as a result of artworks like Eduardo Kac's green rabbit, a transgenic animal that glowed in the dark under UV light, it unleashed a lively debate about whether biotechnology would become an artistic medium and whether the fine arts should engage with transgenic or cellular organisms. When Bio Art pioneers like Joe Davis began to work with DNA in the late 1980s in projects such as *Poetical Vaginal* or *Microvenus* it was a major challenge to get access to scientific laboratories in an institutional context. Passing through the doors of institutions and getting access to a wet bench in a laboratory to go 'hands-on' meant in those days a radical change of location.¹ Moving from the studio into the laboratory provided the fine arts with a variety of new materials like bacteria, cells, tissue cultures, or transgenic organisms as a means of artistic expression, but this shift also made it necessary for artists to get acquainted with new epistemologies and the logic of the techno-scientific regime, which governs experimental bench work through protocols, techniques and methods, instruments and equipment, as well as a complex set of human and non-human agents and most notably with patents and the flow of global capital.²

With the emergence of Bio Art, biotechnology became part of the art world. By bringing cutting edge technologies closer to the public, Bio Art has provoked wider reflection about the ethics of turning biology into technology and in particular has raised questions about the aesthetic and ethical status of manipulating living organisms. By showing transgenic organisms in galleries and museum contexts, Bio Art drew attention to the fact that biotechnology had already crossed the divide between the artificial and the natural back in the 1970s. Unsurprisingly, the selective manipulation of living organisms for artistic purposes provoked passionate debates about the shifting concept of life, a concept that has changed dramatically since the arrival of biotechnology within the frame of technoscience.³ Art emerging from the laboratory

opened up non-normative debates about life and its limits in the crossover between Bio Art, ethics, sciences, and the humanities, and also framed controversies about the growing influence of science and technology and a bioscience-based economy on our societies as well as on the fine arts.

Whereas in the early days Bio Art primarily sought to reveal the state of the art of biotechnology or tissue engineering, current Bio Art practices interrogate the limits, boundaries, frontiers, and frameworks within which life can exist and how fragile these limits are in an age that some have termed the Anthropocene. Altering nature deliberately using biotechnology – in a scientific laboratory or in the kitchen at home – is still a vital topic in Bio Art. However, because we have transformed our entire planet in recent centuries into a kind of laboratory where traditional distinctions between natural and artificial, subject and object, human and non-human agents no longer hold when confronted by the enormous ecological problems and challenges that exist today, speculative biology is now becoming a major issue in Bio Art.

One of the most promising approaches of bringing Bio Art and speculative biology into a fruitful liaison is demonstrated in the work of the Turkish artist and researcher Pinar Yoldas, who has lived in the USA for more than a decade.⁴ Yoldas, who has a background in the fine arts, design, architecture, as well as science, developed with her project *An Ecosystem of Excess* a visual narrative of post-human life forms. Exhibited in 2014 in a solo show at the Schering Foundation in Berlin, and the Aksioma Institute for Contemporary Art, Ljubljana, and also as part of the group exhibition *ThingWorld* at the International Triennial of New Media Art, National Art Museum of China (NAMOC) in Beijing, *An Ecosystem of Excess* presents prototypes of neoplastic organs within organisms, which develop novel survival strategies by adapting to the highly toxic marine environment created by the waste of our affluent mass consumer societies. The prototype *Stomaximus*, for example, represents a digestive organ in the form of a maximised stomach with chambers lined with a variety of

Pinar Yoldas OPPOSITE TOP: *NeoLabiumTM* 2012. © Pinar Yoldas.

OPPOSITE BELOW: *Fool's Fowl: an ovarian tribute to form follows function* 2013.
© Pinar Yoldas.





Pinar Yoldas *HiCortexTM*: Enhanced neocortex for the executives of the future 2013.
© Pinar Yoldas.

bacteria specialised in metabolising different plastics, like high density (HDPE) and low density (LDPE) polyethylenes, polypropylene (PP), and many others.

Plastic pollution along with overfishing, acidification, damage caused by oil and gas extraction and rising temperatures due to climate change are factors that have been putting enormous stress on marine ecosystems for decades. With the discovery of high concentrations of microplastics in the vortices of ocean currents like the Great Pacific Garbage Patch in 1997 – followed by the discovery of four more gyres – it became obvious that millions of tons of plastic garbage are drifting in the oceans, adding synthetic molecules and thus changing dramatically the composition of this marine habitat. As by-products of human mass consumption, modern materials like plastics have turned the oceans into a new ecosystem where artificial and natural aspects are inseparably connected. Scientists from Brown University and Woods Hole Oceanographic Institution recently came up with the term ‘Plastisphere’ to describe the transformation of our marine ecosystems into a human-made plastic soup that generates new organisms and new microbial reefs even on the smallest plastic particles. Pinar Yoldas moves from observation and documentation to speculation to present a

colourful future scenario that has its origins in the past and will continue to run its course no matter what.

With her previous project *The Very Loud Chamber Orchestra of Endangered Species*, a kinetic sculpture shown at the Brown Gallery and the Power Plant Gallery, Duke University, Durham NC, in 2013, Yoldas addressed the anthropogenic impact on our ecosystems; 14 skulls of endangered species were arranged in a circle with 14 loudspeakers to create a three-dimensional sound environment. The artist collected recordings of the voices of various endangered animals from archives and then linked the voices to statistical data of pollution levels like CO₂ emissions or water pollution. This sonification project provides a new avenue to reach a broader audience with an audio experience about the inexorable loss of the planet’s biodiversity by converting scientific data into soundscapes. The concept of *The Very Loud Chamber Orchestra of Endangered Species* is based on the earlier kinetic sculpture *SCREAM! A Homage to Edward Munch and All the Dead Racoons*, shown in 2007 at the Art Sci Gallery Space, University of California Los Angeles, which Yoldas created prior to the U.S. Presidential Election in 2008. The sculpture consists of the skull of a racoon and a loudspeaker, which are connected to a voting machine. Every time a vote is cast for the Republicans, the skull emits a high-pitched scream; it seems to complain that natural resources and non-human animals alike are treated like commercial commodities rather than as the very foundation of our existence.

Before Yoldas turned to the question of what kind of life forms will evolve from the Plastisphere in her project *An Ecosystem of Excess*, she engaged with the issue of how the human species will design itself when the biotech era develops its full potential in the near future. In 2013 her solo exhibition *AlterEvolution* at Ekavart Art Gallery in Istanbul presented a range of sculptural pieces that she designed to stimulate our biological imagination, most notably three ‘designer babies’ with promising titles like *BA25TM*, *HiCortexTM* and *HumanimalTM*. A vision of the future fusion of technologies of enhancement and selection, like cognitive enhancement and pre-implantation genetic diagnosis, is the conceptual background of sculptural pieces like *HumanimalTM*, a chimeric human that unifies the human nervous system with highly efficient non-human musculature. It depicts superior athletic skills in a composite body of human intellect and animal physical strength which will be of great advantage in a highly competitive world ruled by the logic of technoscience and capitalism.

Some years earlier in the group exhibition *Speculative* at the Los Angeles Contemporary Exhibitions Yoldas presented her sculptural pieces *NeolabiumTM*, *SuperMammalTM* and *PolyPhalliiTM*. These sculptures challenge both the social as well as the anatomical norms of how we perceive both sexes by designing prototypes of enhanced sexual organs that would multiply, intensify, and purify human sensations. With around two dozen vulvas *NeolabiumTM* is conceived as a tissue-engineering artefact, a neo-organ or artificial organ that is grown *ex vivo* on a pre-designed matrix scaffold, with 8000 additional nerve endings to enhance sexual pleasure. *NeolabiumTM* refers both to the fact that female sexuality is controlled and restricted in many societies, in the most

drastic form through female genital mutilation, and it also points to rampant consumerism and aesthetic excess that turn female genitalia via aesthetic genital surgery into a fashionable commodity and could – with an enhanced artificial organ – update female anatomy to as yet unknown pleasure production capabilities.

Whereas Yoldas enhances her human designer babies with advanced cognitive and physical abilities, with *Fool's Fowl* she presents a kinetic sculpture that represents the opposite: a vastly diminished animal that once was a chicken (*Gallus domesticus*) and is now reduced to a fabrication unit, with no eyes, no mouth, no limbs, no brain and without feet. In the context of industrialised food production chickens are locked away in small cages, where they cannot move and live under execrable conditions. The lack of movement causes a long list of physical and psychological problems in the animals, because brain activity, movement, and positive emotions are inextricably connected. Instead of fighting a desperate battle for better living conditions for an animal that has been for thousands of years one of the most common providers of meat and eggs, it makes much more sense to design a new biological entity that will not suffer from the brutal conditions obtaining in the industrial food production cycle. Yoldas' speculative approach is not far from reality: in 2002 scientists from the Hebrew University in Israel presented a featherless chicken, which they maintained was a new breed of animal, that would suffer less, because one of the characteristics of fast-growing chickens is that they develop more bodily heat; therefore, featherless chickens would suffer less.

Yoldas' approach to speculative biology draws attention to the fact that Bio Art is unquestionably an interdisciplinary genre that opens up new artistic expression. By using biotechnological methods and organic material in the arts Bio Art can explore possible dialogues between culture, 'nature', science, and the fine arts as well; but in addition, Pinar Yoldas' projects also make it quite clear that the way biotechnology is perceived and utilised today is deeply rooted in capitalism and our mass consumer culture. Speculating about how things could be in the near future, is for her an apposite cross-disciplinary approach for challenging us to collectively rethink how we want our future to be and what kind of aspirations will be possible or even probable under the auspices of capitalism and mass consumerism. ■

1 Jenny Boulboulé 'In Touch With Life: Investigating epistemic practices in the life sciences from a hands-on perspective' in *Bio Art, Descartes as a hands-on practitioner, molecular genetics laboratories*; Diss, University of Maastricht, 2012, p37.

2 Ingeborg Reichle 'Art in the Age of Technoscience. Genetic Engineering, Robotics, and Artificial Life' in *Contemporary Art*, Vienna, Springer, New York 2009.

3 María Antonia González Valerio, 'BioArt on the Verge of Aesthetic Ontology' in *Annales, Ser. hist. sociol.* 22, 2012, pp. 327-334.

4 Pinar Yoldas received her MFA from the University of California, Los Angeles. She is currently working on her PhD at the Art, Art History, and Visual Studies department at Duke University. Prior to her education in the USA, she gained a Bachelor of Architecture from the Middle East Technical University, a Master of Arts from Istanbul Bilgi University, and a Master of Science from Istanbul Technical University.

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Pinar Yoldas *The Very Loud Chamber Orchestra of Endangered Species* 2013. © Pinar Yoldas.

