ECODATA—ECOMEDIA—ECO-AESTHETICS: TECHNOLOGIES OF THE ECOLOGICAL AFTER THE ANTHROPOCENE

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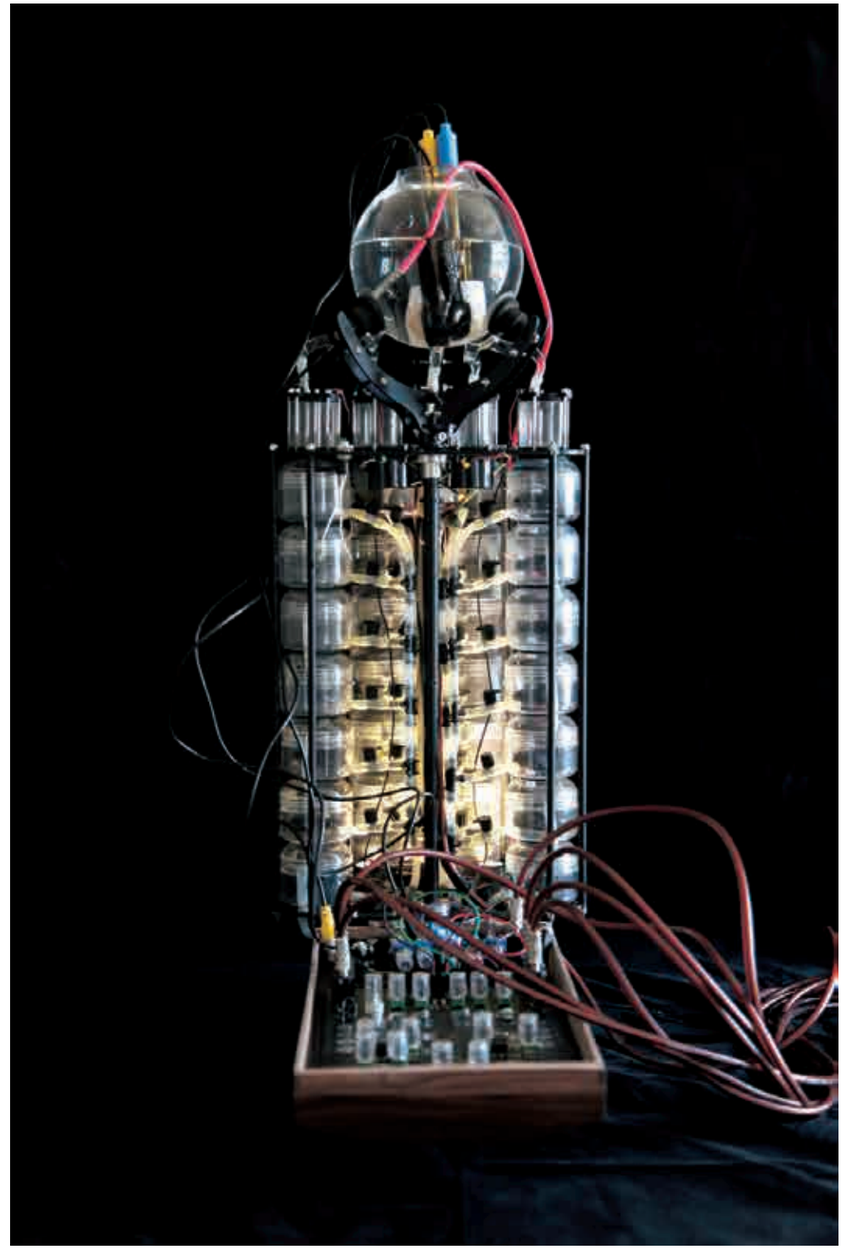
> "If media can make a difference in investigating the ecological crisis, we need to begin with media technology itself."[1]

In the arts, the impression has been created for some years that the concepts "Anthropocene," "Capitalocene," and "technosphere" have outranked ecological or green ideas. The notion that we earthlings are stuck in a machine that has gotten out of control has an iron grip on us. But can we counter this apocalypse with something by "sharing" the newest photos from our cellphones? And what good does it do if I change my life when Africa is being hollowed out on a massive scale and filled up with electronic waste? How can visions develop when ecological or green thinking has migrated to the inflationary language of supermarkets and corporations in such a way that it then simply seems arbitrary, unsexy, or neoliberal?



Gilberto Esparza, *BioSoNot,* 2017

Anne Marie Maes, *Intelligent Guerilla Beehive,* 2016

As well-conditioned machine subjects of this machine world, we know that we have hardly any other choice than to accept the contradictions: we abhor the exploitation of the Global South and are nonetheless involved in it as accomplices. If we would like to contribute something productive to the current situation, we have to accept our imperfectness with all humility and perhaps also with a bit of humor. (And why not post pictures of my compost worms on Instagram?) It is necessary to develop eco-aesthetic, transversal thought and action that recognizes our paradoxical and corrupted form of existence, and opens up other levels instead of simply offering simple technical "solutions" or dismissing the technological as something alien to our nature. This means leaving the Anthropocene behind and trying to open up prospects of an "after the Anthropocene"—of an "afterlife" in the here and now.

For this reason, we have chosen to continue to use the term "eco," because it has potential. Also, counter to those who maintain that ecological or green thinking is characterized as too harmonic (deep ecology, Gaia) or dualistic (we have to save nature), recognizing the biosphere as an *oikos* (household), which means differentiated relationships between various protagonists and their "niches," does not necessarily have to signify harmony. It instead recognizes that things and living beings are embedded in quite specific relational, hence interconnected, relationships. These "network ecologies" (Jennifer Gabrys) are not always obvious to others. Hence, thinking ecologically means examining all the chains, correlations, processes, dependencies, conditions, and interfaces in which the very diverse animate and inanimate inhabitants of the earth "coexist" (Timothy Morton). The environment, the surrounding world, is no longer what is external to the human animal, no longer "nature"; it is instead "our" bio-technosphere, which we share, inhabit together, and therefore also engender. It is now necessary to work on this understanding of our world as a "commons" since the economic perspective that regards everything outside of its interests as passively given, devaluing and turning it into waste, is far too dominant. The involvement of artists today therefore consists to a great extent of sensitizing us to what we occupy and destroy out of ignorance or complicity. Media technologies and interdisciplinary cooperation with the natural and techno-sciences play a substantial role in this and challenge conventional concepts of art. In what follows, we would like to discuss the spectrum of ecomedia strategies and visionary positions from our exhibition.

ECOMEDIA AS INSTRUMENTS FOR INCREASING ATTENTION

In the touring exhibition *Ecomedia* (2007–09) we started to become interested in the question of how artists make use of media and technologies in exploring the ecological, media technologies that we seem to use so confidently, while they—and their automatisms or the service providers coupled with them—use us as well. We understood these technologies not only as instruments, but frequently also as fractured and paradoxical actors. They are involved so ubiquitously and powerfully in producing knowledge about our biosphere that one can actually no longer get around not appropriating, alienating, or "abstracting" them. We called them ecomedia. Similar terms are geomedia, earth media, and environmental media. Their use gives rise to hybrid conjunctions, between technologies for recording and sending media and the material world and environment (atmosphere, bodies of water, soil, people). Various surveillance technologies as well as data collected by means of various measuring techniques are supposed to facilitate an "articulation" of hitherto unknown worlds and environments in the

Aline Veillat, *Pas de deux en vert et contre*, 2009–2012

Joaquín Fargas, *Glaciator*, 2017

form of artifactual media arrangements. The signals received by machines via various methods (e.g. sonification) are frequently also put into a pitch that is audible for human beings. Ecomedia techniques couple us techno-aesthetically with realities about which we (as yet) know nothing, and consequently become mediators between worlds. This is virtual reality of another kind: the perception of a reality that has always already existed virtually. Ecomedia thus function in real life and symbolically as instruments for increasing attention with respect to nonhuman protagonists.

While information technologies record changes on planet earth and transform it into "Program Earth,"[2] natural scientists understand the zones of "nature" that they observe in an especially systematic way as outdoor laboratories.[3] Karen Barad speaks of the fact that people experiment with the earth because they do not know what effects their (technology-based) actions have.

This technologically generated ontological status of the earth as a machine, program, laboratory, and experiment with an unforeseeable outcome has prompted us to inquire—more specifically within the framework of the current exhibition *Eco–Visionaries* than in the exhibition *Ecomedia*—into the significance and aesthetics of data, technologies, and methods of the natural sciences in art: what do media technologies accomplish with respect to sensitizing the public to ecology? What aesthetic settings, narratives, and experiences do they engender? How do they deal with or disrupt techno-natural scientific methods? Are there new forms of intimacy (between bodies, technologies, and data), of communication, emotion, and the transgression (of species), and what does this mean with reference to the human ability to act?

These questions interest us not only because media artists experiment particularly intensely with hybrid, artifactual, and transmedial arrangements, or strive to make their access to the experience of the world a subject of discussion. What seems to be linked to media technologies is, indeed, the (positivistic) hope that an environmental problem then—when it can be substantiated with data—becomes something of which people are generally aware and can be altered. Trends in the direction of citizen science projects, i.e. also collecting environmental data outside the arts, substantiate this. In our opinion, however, in the case of these techno-cultural practices it is more a question of participation and emotional involvement than of obtaining information. Because does the problem not really consist in the fact that we very often have the information (about high levels of air pollution, etc.), but ultimately do not do anything with it?[4] Because it would be inconvenient? Because it would mean openly saying no to whitewashing? Is not what we need instead a different kind of information and other ways of obtaining it? A being-involved, a surplus of information that we perceive with the senses, that moves us aesthetically and hence gives us the courage to say no?

> "[S]atellites are to ecological activism what cellphone cameras are to #BlackLivesMatter.... When the cool, abstract data of the environmental sciences are adopted and expressed by impassioned individuals and groups, you get the Climate Justice Movement. Spanning the globe with its powerful proxies, the climate movement turns data into knowledge, then it turns knowledge into aesthetic forms, and finally it turns aesthetic forms into action."[5]

Rasa Smite and Raitis Smits, *Fluctuations of Microworlds,* 2017

Chris Jordan, *Abbatross,* 2017, video still

Brian Holmes's argumentation is exemplary for the assumptions that are widespread among many activism-oriented media artists and theorists: that the tools practically turn us into activists automatically. In reality, however, the crux, which neither technologies nor art, nor other nonhuman stakeholders can resolve, lies precisely in the leap from knowledge to action. Needed at this point are simply also, as Félix Guattari emphasized, groups of people who do so.[6] The hope in art, as a result of its ability to involve people emotionally and mobilize them, at least on the level of the senses, is nevertheless not unfounded: people who have seen an albatross die on film and in front of a camera will very likely have a different relationship to birds, plastic, and perhaps also to activism than beforehand.

We maintain that the visionary and moving quality of artistic projects lies in producing an aesthetic surplus. In other words: the visionary potential of ecological art lies not only in addressing exploitative relationships in terms of content or in outlining utopian fantasies and counter-models, but also in generating unexpected aesthetic experiences with our co-beings.

FROM RECORDING DATA TO GENERATING RELATIONAL COMMUNICATION AND LIFE MODELS

Ecomedia strategies have shifted in the past ten years: while recording and interpreting in the form of visualizing/sonicating relatively clearly defined objects, such as weather data, once stood in the foreground, the new technologies today intervene directly in ecosystems. The latter are perceived in their material vibrancy, techno-organic artifactuality, and indeterminability. In this sense, technologies monitor or track nonhuman, seemingly "insignificant" small protagonists, such as bees, ants, or worms, so as to make it possible to experience their being as singular modes of existence within a comprehensive context.

We would like to highlight the following strategies:
A fundamental method of ecological thinking today comprises showing linkages between the protagonists and things involved, and making the technological as well as economic and milieu-based dependencies and/or relations of exploitation comprehensible. What is new in this is the specific focus on the suppressed and in part seemingly apocalyptic flip side of our data and trash society. This is represented in the installation *Exit* (2008–15)[7] by an artist collective in collaboration with Diller Scofidio + Renfro, the net art projects *DEFOOOOOOOOOOOOOOOOOOOOOREST* (2016) and *CO2GLE* (2015) by the Spanish artist Joana Moll, the *Rare Earthenware* (2015) project by the British artist collective Unknown Fields Division, and the video *Albatross* (2017) by the American Chris Jordan.

One central means that provides evidence of previously unknown functional processes in the microcellular field, and also serves as a means of sensitizing and exciting people about other levels of reality, is the use of sound within the framework of acoustic ecology. This includes the apparatus *BioSoNot* (2015) by the Mexican artist Gilberto Esparza, the installation *Trees* (2014–16) by the Swiss artist Marcus Maeder, and the work *Reserva Sonora de la Biosfera de Asturias* (2017–ongoing) by the Spanish sound artist Juanjo Palacios.

Not sound, but instead interactive apparatuses or "prostheses" can become an aesthetic means for making the behavior of particular ecosystems or protagonists visible, such as

plants. This strategy is in operation in the installations *Inhale-Exhale* (2008/2013) and *Dialogue* (2008) by the Finnish artist Terike Haapoja as well as in the installation *Pas de deux en vert et contre* (2009–12) by the French artist Aline Veillat.

Sensor-supported recording, monitoring, and experimenting with living microsystems, as well as translating them into extensive transmedial installations, is the method used in *Fluctuations of Microworlds* (2017) by the Latvian artist duo Rasa Smite and Raitis Smits, and in *Intelligent Guerilla Beehive* (2016–17) by the Belgian artist Annemarie Maes.

More and more artists are working within the framework of symbiotic, experimental, and laboratory-like practices that interweave human and nonhuman, and artifactual protagonists, milieus, and machines, in surprising relationships. They are made possible by experiments, communication, emotions, and empathy. This is done by the Swiss artist duo Baggenstos/Rudolf with their installation *Fostering Duckweed—From Urine to Protein* (2016–17), and by Knowbotiq's *Genesis Machine* (2017) as well as the wearable *Symbiotic Interaction* (2016/17) by the Spanish artist couple Maria Castellanos and Alberto Valverde.

The empirical knowledge of the Anthropocene that the earth is a planet with limited resources and is construed as an experimental laboratory, both materially and digitally, is addressed in the installation *Domestic Catastrophe N°3: La Planète Laboratoire* (2012) by the French artist duo HeHe. The five-channel video installation *Earthworks* (2016) by the British artist duo Semiconductor and *Glaciator* (2017) by the Argentinian artist Joaquín Fargas also move in this direction.

Artistic visions in the period of the Anthropocene are difficult. They can all too easily become infected by either the technocracy that makes large-scale projects such as geo-engineering so repelling, or by that kind of salvation thinking that we are familiar with from diverse religions. Visions, if they do not want to be simple or spiritual means for solutions, can always only be experienced aesthetically or sketched out by means of multiple refracted patterns and figurations. The performative video installation *Acoustic Ocean* (2018) by the Swiss artist Ursula Biemann attempts to do this by introducing a charismatic figure that mediates between water and land, knowledge and action—and hence by opening up a sort of fictitious path on which we earthlings might set forth, together.

1 Richard Maxwell et.al., "Introduction," in *Media and the Ecological Crisis,* ed. Richard Maxwell et al. (New York and London, 2014).

2 Jennifer Gabrys, *Program Earth: Environmental Sensing Technology and the Making of a Computational Planet* (Minneapolis and London, 2016).

3 Andreas Rigling in discussion with the author, Swiss Federal Institute for Forest, Snow, and Landscape Research, WSL, August 2017.

4 Naturally, there are many nations that manipulate publically accessible measurement data, such as Japan, for example, does for radioactivity in the ground. This is why alternative or activist measuring cultures have established themselves. In Switzerland, where the relevance of data is not a problem, the danger is simply glossed over so that it is possible to raise the maximum values, as is currently being done for the levels of pesticides in bodies of water.

5 Brian Holmes, "Empathiemaschinen: Neue Organe für den Ökokörper?" *Springerin* 4 (2017), p. 28.

6 Félix Guattari, "Remaking Social Practices," in *The Guattari Reader,* ed. Gary Genosko (Oxford, 1996), p. 262-272.

7 The other artists of this video installation are Mark Hansen, Laura Kurgan, and Ben Rubin, in collaboration with Robert Gerard Pietrusko and Stewart Smith. It is based on an idea by Paul Virilio.

Baggenstos/Rudolf, *Fostering Duckweed—From Urine to Protein,* 2016–2017

Marcus Maeder, *treelab,* 2017

Terike Haapoja, *Dialogue,* 2008

María Castellanos and Alberto Valverde, *Symbiotic Interaction*, 2017