

Alchimia Nova d'AnneMarie Maes: De l'emergència de conrear el nostre Jardí

New Alchemy by Anne Marie Maes: The need to cultivate our Garden

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Abstract

Artist and beekeeper Anne Marie Maes, fascinated by bees for more than two decades, deals with the close interaction and coevolution between these insects and urban ecosystems through artistic research practices and in collaboration with scientists and engineers. Her projects involve complex relationships between living organisms and objects manufactured with biotechnology within the «postdigital paradigm», in a world where technology is completely intertwined with all facets of our existence.

Keywords:

art and beekeeping; environmental emergency; digital technology; ecological activism; cohabitation

1. Introduction

The growing interest from art in the exciting universe of honey bees is far from recent. The last decade, there has been an increase in alarming news about the decline and disappearance of honey bee colonies. Likewise, the current concerns and environmental emergency on a global scale are forcing us to rethink and reactivate a renaturalized and much more sustainable city model, through urban horticulture and beekeeping. In this sense, bees become a reflection on our lives and not only operate as a social metaphor, but also become potential environmental bioindicators; and according to experts, even our future depends on them.

The study of bees has become a focus of research for many artists and curators, proposals have been presented in various exhibition formats. It is well known that in the extensive cosmology of the iconic artist Joseph Beuys (1921-1986), bees, honey and wax play an important role. In fact, his "extended concept of art" and "social sculpture" are based on examples from an entomological point of view.

A recent example is the exhibition project "Beehave. Where are the bees? ", curated by Martina Milà, that took place at the Miró Foundation in the spring of 2018. The visitor was invited to take a sensory immersion in the universe of these pollinating insects, through 'a series of installations and interventions situated within the museum, but also distributed in different parts of the city, in which twenty local and international artists participated, including AnneMarie Maes.

2. Cohabit and cooperate, cultivate and pollinate

AnneMarie Maes (Brussels, 1955) is one of the contemporary artists who has devoted herself with the most perseverance, commitment and intensity to the study of bee colonies in recent decades:

My concerns for bees stem in part from my fascination with these amazing insects: bees present very original solutions to the challenges facing social insects, for example in the field of communication and collective decision-making. . They are an endless source of visually stunning images and sounds, and their

remarkable collective behavior provides inspiration and metaphors for the functioning of human society. (Maes, 2015: 46)

On the roof of his studio in Brussels he has created an experimental garden, Hortus experimentalis (2009 - ongoing) (Figure 1), an outdoor laboratory where sustainable hives are monitored by sensors, which by means of sensory process algorithms analyze the state of the colony, the quality of the pollen and the behaviors of the bees. This includes Bee Laboratory (2010) (Figure 2), a long-term project and an open framework that helps highlight the problem of genocide in the poultry population. It was born as a natural extension of urban gardens, since without pollination it becomes impossible to cultivate the garden. Bees are the main pollinating insects and provide a fundamental ecosystem service to humans in the form of pollination of crops (Bosch, 2018: 48).



Figura 1: Hortus experimentalis (2009 - en curs) Centre de Brussel-les. Font: AnneMarie Maes



Figura 2: Beelaboratory (2010-en curs) Brussel-les. Font: AnneMarie Maes

At the same time, the artist promotes collaborative projects with the aim of creating "green corridors" for all city dwellers. Open greens project (2008-2012) focused on the creation and maintenance of urban gardens on the rooftops of central Brussels. Creating an urban garden is a great initiative that requires solving a wide range of practical problems, such as convincing building owners, conditioning the roof floor, choosing the substrate, choosing diversity of seeds and plants, building a greenhouse, managing the supply of rainwater, sowing, planting, watering, combating pests and weeds with biological methods, harvesting and preserving garden products, etc. (Figure 3). Many of these activities take place through groups of artists and scientists in Brussels co-founded by the same artist, such as OKNO (2004) and Brussels Urban Bee Lab (2009).



Figura 3: Hortus experimentalis (2009 - en curs) Brussel-les. Font: AnneMarie Maes

In his Blog notebooks (web) we find very detailed information that allows us to delve into the daily challenge of the artist's work and the difficulties involved in working with beings, organisms and living matter. It should be noted that, in parallel with the profession of gardener, horticulturist and beekeeper, the use of technology

becomes not only a support for the daily tasks of maintaining living ecosystems, but also serves to study and understand these processes. Naturally. Paradoxically, this complex monitoring system and sensor networks makes the invisible visible, and allows continuous monitoring through the web. Through ongoing collaborative work with scientists and specialists, the data is then processed and then made available to the public. For example, genetic material extracted from the body of bees allows it to detect which viruses and bacteria attack them. The results of the analysis show that the honey produced in these smart urban hives is less polluted and of higher quality than some of the collections in rural contexts where pesticide use is widespread.

Therefore, his extensive artistic research materializes in techno-organic objects, artifacts that combine digital manufacturing and crafts, biotechnology and DIY. His projects generate a constant source of protoscientific experiments, holistic interventions close to permaculture, community activities with the involvement of various groups, sculptural objects and photographs of great aesthetic value. All of these, understood as process materials and in process, are displayed through a display, halfway between the laboratory and the cabinet. A staging, in which the diversity of media and media, as well as their beauty and rarity, activate our curiosity to understand and know the world of bees.

The following are two projects that investigate the expanded concept of beehive.

2.1 Transparent beehive: from sound device to smart hive

The Transparent beehive project (2012-2013) (Figure 4) consists of the design and construction of a hive for the observation and monitoring of the evolution of a bee colony. Made of plexiglass, wood, aluminum and steel, inside live the live bees, which have access to the outside world through a plexiglass duct. It was initially installed on a roof in Brussels connected to the laboratory of urban gardens and has since been shown in various spaces and artistic contexts. The extensive documentation and materials generated by this project were displayed in the exhibition "Transparent beehive cabinet" (2013), at the Scientific Inquiries, Koç University in Istanbul.

The artist starts from the so-called "respectful observation" of the life of bees introduced by the Swiss entomologist François Huber (1750-1831) in his book *Nouvelles observations sur les abeilles* (Geneva, 1792). Huber invented the first rational hive, which he called *Ruches en livres ou en feuillets* ('Book or page hive'), built with wooden frames that could be opened and seen inside as if they were pages of a book.

Huber invents a device that allows you to read directly into nature to extract the sweetest benefit from it without disturbing the industrious producers. The beekeeper, when opening the leaves, contemplates without moving all the corners of the beehive. (Ramírez, 1998: 32-33)

Here the bees built honeycomb structures composed of hexagonal wax prismatic cells intended for the storage of honey and pollen and for the breeding of larvae.

Maes adopts this system in Transparent beehive, to design a living work, a fully monitored intelligent hive. Equipped with cameras, microphones and sensors inside, they monitor the intense labor activity of the insects inside. Additional sensors measure all variants: temperature, humidity, etc. Data is processed through sensory processing, pattern recognition, and artificial intelligence algorithms. Finally, they are visualized using complex graphical algorithms to make the state of the colony visible (Figure 5).

A relevant aspect of this project that will be developed even more thoroughly in Sound beehive experiment is its auditory representation. That is, the perception of the hive through sound editing and composition, where the microphones continuously record the buzz of the colony. Buzzing that fluctuates depending on the purity of the air and the temperature inside the hive as a result of the ventilation caused by its inhabitants.

The increase and decrease of swarm activity in the hive and its influence on the buzz produced by the colony are the common thread of the transformation of the recordings. I thus use natural phenomena as musical tools and, in retrospect, musical tools as an artistic interpretation or analysis of natural phenomena. (Maes, 2016: 105)

Here the artist prioritizes observation through sound perception and, as if it were a tribute to François Huber, invites us to understand the life cycle of bees through listening. Paradoxically, despite his blindness, the observations of this beekeeper contributed to remarkable discoveries in the behavior of bees. Huber already sensed that these insects had some kind of rational intelligence and advocated that intense beekeeping could lead to the self-disappearance of the swarm. Maes is also very critical of the degree of domestication

and exploitation practiced by modern beekeeping, the use of antibiotics and incestuous practices to achieve a good pedigree, and firmly believes that the solution lies in the autonomy of the hive.

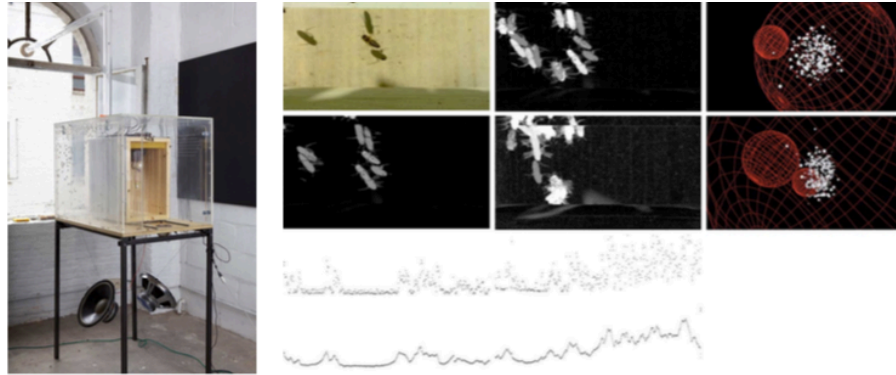


Figura 4: *Transparent beehive* (2012-2013) Instal·lació OKNO's Drying Room, TIK-festival, Brussel·les. Font: AnneMarie Maes

Figura 5: Visualitzacions de l'activitat de les abelles basades en la detecció de moviment Font: AnneMarie Maes

2.2 Elbbienen: from living sculpture to organic hive

Elbbienen ('Elbebees') (2020) (Figure 6) is one of the artist's latest projects, carried out within the Hamburg Maschine program. Kunst im öffentlichen Raum ('Art in Public Space'), organized by the Stadtkuratorin Hamburg and located above a mooring on the edge of the Goldener Pavillon ('Golden Pavilion'), a popular floating café located on the peninsula of 'Entwerder, on the river Elbe in Hamburg. It is a complex installation made with biotechnology, the result of more than ten years of proto-scientific research by Maes.



Figura 6: *Elbbienen Project, Intelligent Guerrilla Beehive Hamburg Maschine, Art in Public Space, Hamburg* (2020) 130 x 130 x 150; materials: fusta, metall, cera, colònia d'abelles, sensors electrònics, processing & streaming. Font: AnneMarie Maes

Figura 7: *Elbbienen Project* (2019-2020) Vista inferior amb l'entrada al rus. 3D Rendering. Font: AnneMarie Maes

Elbebees is an "organic beehive" sculpture made with the latest 3D technologies in collaboration with the Angewandte Robotics Lab of the University of Applied Arts in Vienna (Figure 7). This hive is designed and equipped with a digital surveillance system with artificial intelligence, in order to receive and guarantee the survival of the bees. "This device is under technological control and human," the artist reminds us, and a beekeeper periodically checks the condition of the hive. Paradoxically, no honey is extracted from it and therefore has no productive utility or purpose.

The device records the behavior of the bee colony, monitored with cameras, microphones and sensors, and this information is transmitted to the exhibition space of the Golden Pavilion. In addition to showing local information from the bee colony, real-time infrared footage of a similar hive in Brussels is also broadcast. The artist creates a juxtaposition of urban ecosystems in two European cities (Brussels and

Hamburg), and these ecosystems are visualized and represented by the differentiated behavior of two bee colonies.

Elbees becomes, on the one hand, a refuge for urban bees and, on the other, a biosensor that interacts with the environment and measures the pollution of the city of Hamburg. Not far from the Golden Pavilion, on the other bank of the Elbe, in 1983, Joseph Beuys also denounced the serious ecological problem posed by the dumping of highly polluting sediments from the port area, located in the defunct village of Altenwerder fishermen. The project "Gesamtkunstwerk Freie und Hansestadt Hamburg" (Total Artwork Free and Hanseatic City of Hamburg), which was finally not carried out, proposed the extraction of toxins by growing plants in contaminated soils. This action was only the prelude to a complex and long-term social process, in which all sectors of society had to be involved to promote the ecological transformation of the city.

Elbbienen is a smart guerrilla hive made with biodegradable materials and cutting-edge biotechnology, but above all it is a living sculpture with the "thermal character" of every plastic principle described by Joseph Beuys.

[...] because the bee likes to live in a space with a certain atmosphere of organic heat. What was decisive was the primitive hive made like a basket of woven straw; this was final. The modern hive consists of a wooden box, a hardened material that no longer offers this cozy atmosphere. And we come to the expression that has interested me in all the sculptures: the warm character. In the plastic theory I developed, the thermal character plays a relevant role in the warm sculpture that finally extends to all things social ... And we have to associate all these relationships with bees. (Beuys, 1975: 375)

The project evokes issues of sustainability and biodiversity, explores ecological aspects of digitization in the context of Hamburg Maschine, "a metaphor for the city as a machine in the digital age," as defined by its curator, Dirck Möllmann. (Figure 8 and 9)

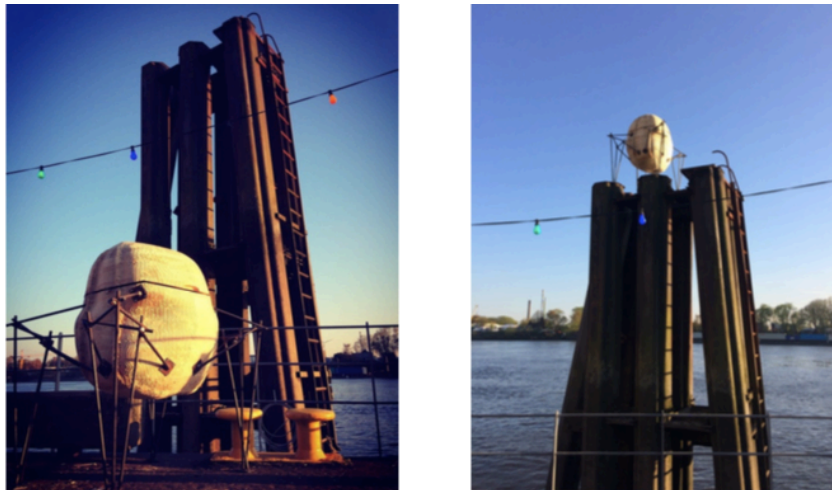


Figura 8, 9 : Elbbienen Project, Intelligent Guerrilla Beehive Hamburg Maschine, Art in Public Space, procés d'instal·lació dalt de l'amarratge del Port d'Hamburg (2020) 130 x 130 x 150; materials: fusta, metall, cera, colònia d'abelles, sensors electrònics, processament i transmissió. Font: AnneMarie Maes .

New alchemy, as a conclusion

Under the concept of New Alchemy, the artist works on biomimicry with bacteria, organisms and living processes, through biotechnology and biofabrication. Its complex facilities include living organisms, reflect both the problem and the (possible) solution, in multispecies collaborations, in polymorphic forms and models created by ecodata.

A research that is not only developed within the laboratory, but also operates with other agents and confronts other environmental and social factors. Therefore, the artist's practice, absolutely committed to issues of sustainability both in the subjects he researches and in the way he works, is diluted in the natural processes of the garden and its inhabitants.

Maes works with the so-called green space policies, those that are involved with models of both social and scientific cooperation, and evolve in parallel with technological transformations. This leads to implicit

complex relationships between living organisms and objects within the 'postdigital paradigm', in a world where technology is completely intertwined with all facets of our existence.

If Beuys uses the intelligent organization of bees as a metaphor for the transforming power of art to activate human consciousness toward a more just and ecologically sustainable society, Maes focuses his artistic activism on a "cohabitation." and a direct collaboration with the bees to give them back their freedom and autonomy.

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