The New and History
art*science 2017 Conference Proceedings

Edited by Pier Luigi Capucci and Giorgio Cipolletta
The New and History
art*science 2017/Leonardo 50 Proceedings

Pier Luigi Capucci, Giorgio Cipolletta (eds.)
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A few notes about art*science 2017

di Pier Luigi Capucci

art*science 2017/Leonardo 50 International conference was keen on the relationship between artistic and scientific disciplines and celebrated the 50th anniversary of Leonardo journal, published by MIT Press, the most influential in the international arena on the relationships among arts, sciences and technologies. art*science 2017/Leonardo 50 general topic was “The New and History”. The “new”, the “innovation”, have roots in history but they can project this heritage into the future thanks to the collaboration among arts, sciences and technologies.

The conference main topics were:
1) A reflection on the idea of “new”. What is really the “new”, what is the meaning of “new” and “innovation”? Today it is a very inflated issue, everything must be “new”, “innovative” to get attention, to be considered by the media, to get money. What is the meaning of “innovation” for a scientist, an artist, a philosopher, a sociologist, a researcher, a banker, a CEO, an athlete…? What does “innovation” really mean? How can “innovation” be recognized, communicated, fostered, sustained and spread?

2) The relationship between two concepts seemingly in opposition, that instead can and must coexist. The “new”, “innovation,” has its foundation in history, but it can and must revive its heritage in the future, through arts, scientific disciplines and technologies. This is a key element, from cultural, historical, social and economic viewpoints. The Countries in the Mediterranean Rim, and more in general all European countries, have a long history and heritage in art and culture, that can be valued through new disciplines, sciences and technologies.

3) The integration of arts, design and humanities into science, engineering and medicine, sometimes called “Stem to Steam” in the USA (STEM: Science, Technology, Engineering, Medicine; STEAM: Science, Technology, Engineering, Art and Design and Medicine). This is a historical discussion on the need for an inter/trans-disciplinary problem driven research. Among recent approaches on this topic the idea of “consilience” by Edward O. Wilson (Consilience: The Unity of Knowledge, 1998), and Slingerland and Collard’s perspective (Creating Consilience: Integrating the Sciences and the Humanities, 2011, editors).

Some weeks before the conference beginning the topics of art*science 2017/Leonardo 50 were introduced by a discussion on Yasmin, and were relaunched through-
out the events. Yasmin is an International mailing list, supported by UNESCO, Leonardo and Noema, born in 2005. It is collaborative project of a network of people and organizations, artists, scientists, engineers, theorists, scholars, students and institutions that promote communication and collaboration in art, science and technology in the Mediterranean basin regions. Many thanks to the invited discussants/respondents who animated the discussion, moderated by Roger Malina, Nina Czegledy and me. They are Elif Ayiter (Turkey), Wafa Bourkhis (Tunisia), Roberta Buiani (Italy), Salvatore Iaconesi (Italy), Pau Alsina (Spain), Giorgio Cipolletta (Italy), Katerina Karoussos (Greece), Živa Ljubec (Slovenia), Oriana Persico (Italy), Elena Giulia Rossi (Italy), Judith van der Elst (Holland). Some of them also participated to the conference. And of course to all the other people who gave their contribution to the discussion.

art*science 2017/Leonardo 50 conference was also the opportunity for a meeting among the participants to Yasmin mailing list.

I personally want to thank art*science Board, my partners of La Comunicazione Diffusa, who hosted the events, Noema, the Italian Ministry of Cultural Heritage and Tourism (MIBACT), Leonardo/ISAST, the Majority of Bologna, the Guglielmo Marconi Foundation Bologna and the Festival della Complessità, Rome, for the patronage, the partners, media partners and technical sponsors. And all the people who helped in organizing, managing and making the events a success. While I wrote this notes we are working on art*science 2018 edition, stay tuned on the official website, https://artscience.online.
Transgenic Art. The new nature as aestheticization of life
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Abstract

This paper examines some important aspects of transgenic art. Its field of action, albeit small, plays an important role in the contemporary cultural landscape. Together with other performative practices it forces us to rethink the concept of art. In 1998, Eduardo Kac had presented a project called GFP K-9 on “Leonardo Electronic Almanac”, on the idea of creating a fluorescent dog. It was through this project that the concept of “transgenic art” was introduced and the expression coined. Within posthuman condition, it looks like creativity no longer belongs to the world of art. The traditional concept of the medium has lost its value in the face of new processes of cultural hybridisation. The artwork has thus managed to go beyond its graphic representation and immerse itself in life experience, so that the boundary between art and non-art is becoming almost blurred, creating unintentional and unexpected perspectives. This proposal will try to answer the following questions: What type of relationship is being developed among art, science and life? Are there still differences? What does creativity stand for?

Biography

Mario Savini got his PhD at the University of Teramo (Italy). He is a journalist and art critic. He is editor of Postinterface (www.postinterface.com), a web magazine on science and digital cultures. He is interested in the social aspects of New Media and in the relations between contemporary visual culture and biotechnologies. He has taught “Net Art” at the Academy of Fine Arts in Rome and Macerata and “Digital Applications for Art” at the Academy of Fine Arts in Catania. He is the author of the book Postinterface (Pisa University Press). His articles have been published in Wired (Italian version) and Nòva-II Sole 24 Ore. Currently, he is collaborating with the University of Teramo.

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Between the eighties and nineties of the twentieth century, the concept of the end of the border develops and progressively strengthens in later periods. This thought highlights the wear of conventional classifications and the cultural hybridization processes introduced by globalization. Four dates can be taken into account to focus on. The fall of the Berlin Wall, November 9, 1989 is not only seen as the symbol of the end of
communist regimes in Europe, but it also provides the birth of a wider territory: United Germany. Since June 1992, through the traveling exhibition “Post Human” (inaugurated for the first time at the FAE Musée d’Art Contemporain in Pully-Lausanne), curator Jeffrey Deitch deepened a new concept of humanity, critically and creatively converging into the debate on post-human condition, on the rethinking of subjectivity, and the transformation of humans and life. In 1993, the advent of the World Wide Web led to widespread use of the Internet network, envisioning a world at hand: this is the “most representative sign of globalization”\(^1\), as Lev Manovich mentions. In 1996, the first mammal, Dolly the sheep, was cloned. From an ethical and philosophical point of view, this event amplifies post-human reflections and the way of conceiving the boundary idea (this time between natural and artificial life). Specifically, during the nineties of the twentieth century, art underwent a radical transformation mainly due to the diffusion of digital media, biotechnologies and the Internet, shifting the attention to processuality and considering the artwork as a place of transaction. The transgenic art positions itself in this context, (bio-art involving genetic engineering). The first work dates between 1986 and 1987: Joe Davis, artist and researcher at the Massachusetts Institute of Technology in Cambridge, realizes *Microvenus*. It is a synthetic DNA fragment with a coded visual icon, which is introduced in a strain of bacteria. In 1998, the Brazilian artist Eduardo Kac presents the *GFP K-9* project on *Leonardo Electronic Almanac*. The idea was to create a fluorescent dog, proposing to use the concept of and the term “transgenic art”:

Transgenic art, I propose, is a new art form based on the use of genetic engineering techniques to transfer synthetic genes to an organism or to transfer natural genetic material from one species into another, to create unique living beings. Molecular genetics allows the artist to engineer the plant and animal genome and create new life forms. The nature of this new art is defined not only by the birth and growth of a new plant or animal but above all by the nature of the relationship between artist, public, and transgenic organism.

The attention to the transgenic art implies that the artist, together with the scientist, not only has the ability to change life, but he can totally reinvent it from scratch, to his liking. These artworks mix different thoughts, perceptions, values, poetics and feelings, creating a language that is typical of the culture of our time and to develop questions that are constantly renewed.

Feature of these works is their open “form”, meaning the predisposition to rejecting form as an infinite process, a matrix to develop in many different ways. After all, the de-materialization of the object, begun by the artistic movements of the ‘70s, has now become the rule.

New living creatures, animals, plants and flowers overlook life by the artist’s will. They are, in all respects, artistic works highlighting recent scientific advances, inviting them to go over the term “nature” and shifting their attention to the demarcation line between art and non-art.

In this split, there is creativity in transit. It passes through conditions or bodies of different disciplines and combines them together. It is “Transcreativity”. Here, experi-

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\(^1\) Manovich 2002, p. 22.
ence often replaces the artwork and the object gets lost in an aesthetic quality absorbed by existence and characterized by various unforeseeable prods and visions. Our perceptual context undergoes alterations and is characterized by an excessive inflow of stimuli.

Art creates something that does not exist in nature, closing the gap between natural and artificial, reality and simulation, biological and synthetic.

There are currently about thirty artists around the world who have presented at least a transgenic artistic work, but the focus of this paper is on a “new nature”, that is on those plants and genetically modified animals having elements of the human being.

In 2001, C-LAB (an interdisciplinary organization based in London dealing with contemporary art, science and technology) developed The Cactus Project. The work was presented to the public for the first time in 2002 at the University of Hertfordshire (England). It is a living artistic work, a plant with human hair, created by introducing keratin genes into cactus cells. The transformed cells were regenerated as transgenic cactus. The purpose was to have human keratins expressed in cactus cells, morphologically similar to hair and produced externally. The work lingered on a reproductive paradox of genetic engineering: infertility of transformation processes.

Between 2003 and 2008, Eduardo Kac created a new form of life called Edunia – deriving from Eduardo and petunia, a GM plant that expresses the artist’s IgG DNA. Edunia, which is part of the Natural History of the Enigma project, has red veins on light pink petals and an artist’s gene is expressed on every cell of its red veins (the Kac gene produces a protein only in the veins of the flower). The colour of these petals wants to evoke the pinkish-white skin tone of the artist. The gene - which is part of the immune system by Kac – was isolated and sequenced from the blood. What we see is the result of a molecular manipulation, a plant that, like any other, needs good soil, watering and light. An ironic component emerges in this work. The artist decided to give Edunia the gene responsible to identify foreign bodies. Therefore, the gene which identifies and rejects anything foreign (a disease for example), actually lives in a foreign body. Besides being the living image of human blood flowing in the veins of a flower, the work is the symbol of the contiguity of life between different species, it is a poetic reading of the world we are living.

In 2004, the New York artist Kathy High presented the work Embracing animal at the Judi Rotenberg Gallery in Boston. A project widely revised for the Massachusetts Museum of Contemporary Art in 2005. That was an action focusing on the lives of three transgenic rats: Matilda, Tara and Star. They were HLA-B27 transgenic beings presenting a phenotype similar to humans suffering from rheumatic and autoimmune diseases. They were bred for research use in the laboratory, using gene transfer methods. This involved inserting human DNA into rat ovums, which were then transplanted into surrogate uteri of rats and grew in vivo until birth. Their ears had holes and yellow spots on the fur to be better identified. Once they were not useful in the lab anymore, Matilda, Tara and Star were bought by Kathy High to make them live as long as possible and see if they were able to become healthy despite their genetic conditioning. The artist had a great affinity with these animals as she also has autoimmune problems such as Crohn’s

\[2\] The number is the result of my research on transgenic art during 2017.
disease and Sarcoidosis. The rats were treated with homeopathy, good food and games. Kathy High clearly demonstrated that contemporary artistic research tends to linger no longer on the work or the object, but rather on the experience as an aesthetic moment, as a performative action based on comparison, on relation and, in this case, on strong sensibility.

This is what Kathy High wrote to me about transgenic art in a mail on September 17, 2015:

“Transgenic art” allows for engagement with our senses, as well an encounter with living materials, with materiality, with life. This is the “aesthetics” of Transgenic Art. Working with living creatures – or “semi-living” according to Tissue Culture and Art - there is always an ethical aspect to that involvement. How do we treat the living creatures? How do we bring attention to their creation? How do we call them? How do we care for them? How do we “cull” them at the end of our experiment/performance/exhibition? All these questions and more need to be asked by practitioners of Transgenic Art.

This reflection ends with a work by the Greek artist Yiannis Melanitis. The aim of the Leda Melanitis project was the creation of a transgenic butterfly model of LEDA MELANITIS, through the use of one of the genes of the artist Yiannis Melanitis (six6 gene). The idea was to breed transgenic butterflies containing a gene of human origin that acquire ectopic eyes in other parts of the body through the six6 protein. To generate this organism, the plasmid that contains the six6 gene was injected in the egg. From this egg, a caterpillar, then a chrysalis and finally a new transgenic butterfly was born. The first butterfly with a human gene was realised on November 27th, 2016, in a laboratory in Germany. Although the breed was successful, the ectopic eyes were not detected which needs several tries more.

That is how Yiannis Melanitis responded to my interview on the concept of “new nature” published on the web magazine Postinterface on 3 August 2016:

Primarily, all life is new, in the sense that life is not only the result of a decoding process expressed within an environmental status quo, but refers to infinite information exchanges of this genetic material with the environment. In my modus operandi for the artist, information overpowers everything and is impossible to neglect. We may call two organisms with duplicate genome as “identical”, but this is a methodological formalization. The ontological allocation escapes. Organisms examined in the laboratory never share identical dynamics as their environmental clones. Precisely, by reducing the spatial range, we remove their information exchange potential and organisms tend to perform within a restriction frame. Life is not only the genetic potential but also how open it can be to the world…Creating a new life-type after the re-formation of the butterfly genome, is merely the outcome of the artistic process of mixing information. Mixing up genetic information of the human Ioannis Melanitis with Leda Melanitis, establishes a kind of human identity in the butterfly. Nevertheless, life is never new, life is the outcome of a wakeful bricoleur, either man or nature itself, who use old materials in a new classification.

A work has the duration of life itself and becomes less and less recognizable as such. This concept is reiterated through transgenic art – and more generally through bio-art.
Yves Michaud reminds that in the age of the aestheticization of life we are witnessing the disappearance of art.

The new century seems to open with a sociocultural slant that puts more attention on the failure of the boundary lines between different structures and combinations of various styles. The mentioned works witness the speed of mixtures among different ontological categories where the bodies connect to machines in an intimate or hidden way.

The work has expanded the boundaries of its representation to include the experience of life as to make increasingly difficult opposition between art and non-art and creating unintended and unexpected perspectives.

Contemporary visual culture faces new subjectivities that depart from their origins and operate in an expanded field of experimentation. They are “The Alchemists of Our Time”, as the title of the exhibition presented in Linz in 2016 within the Ars Electronica Festival reminds us. These artists tackle and discuss the urgent issues facing the world’s cultures in the background of the difficulties in understanding the rapid changes in the global scenario. Their works ignore the boundaries between art and science, proposing a fusion of different search lines, a mix of different styles that converge into a single structure. Creativity, in fact, seems to be not only a feature of art, but also an expressive form of more than only one discipline. Art not only experiences new languages, but widening its field of research but also loses its features that have distinguished it. Broad-spectator researchers develop new skills and predispositions, working on the future of genetic engineering, robotics and neuroscience. In this area, where new perspectives are opening up, the overturning of the significance of art and the role of the artist are urged.

References

