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Table of Contents

Naturalization and Reification of the Human Global Subjective Experience in Some Forms of Scientific and Technological Art

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ABSTRACT. In recent times, a heterogeneous set of institutions, such as, journals, websites, cooperative spaces of creation, peculiar galleries and museums, have been founded in order to call into question the creative boundaries between art and science. Moreover, famous artists like Eduardo Kac and Natalie Jeremijenko have also called into question these boundaries even before those institutions were founded. In addition, philosophy has also grasped the problematic by publishing academic papers in famous journals like *Leonardo*. A question arises, have the boundaries between art and science been dissolved by the artifacts of these artists? Moreover, are there actual or clear differences among traditional arts, mainstream contemporary art, and scientific and technological arts? Against standard perspectives in philosophy and history of art, I hold that some forms of scientific art are consequences of a historical process which I would like to call "defictionalization" and "demimetization" of arts. This defictionalization is, I argue, associated to the process that Lucy Lippard has called "dematerialization" of contemporary art. The defictionalization traces the boundaries among these recent forms of art by virtue of the cognitive consequences in the receptors. Naturalization and reification of our aesthetic comprehension of everyday social and physical world is a key consequence of that process. This process that contemporary art is going through, allows

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us to question about the nature of the latest art history and, of course, about the nature of the art criticism.

1.

In last years, a particular phenomenon has taken place in Uruguay, in which some spaces of artistic production and diffusion pretend to distinguish themselves from traditional institutions of art like galleries, museums, schools of art, etc.[2] Although they are local institutions, these spaces do nothing but respond to a heterogeneous worldwide tendency which has almost fifty years now.[3] Here, I am specifically referring to institutions that seek to revisit the boundaries between art and science in such a way that these boundaries could be dissolved. In line with this global tendency, academic journals like, for instance, *Leonardo*, have published essays from the dissolutive point of view.[4]

However, can we accept intuitively their programmatic specificity? In

[2] These spaces are *Gen* (https://gen.org.uy/), *Medialab* (https://www.fing.edu.uy/grupos/medialab/), and *Equinoccio* (https://www.eventos.ei.udelar.edu.uy/event/3/session/10/contribution/249).

[3] Some of these institutions are *Laboratorio Arte Alameda*, Mexico, (http://www.artealameda.bellasartes.gob.mx/), *Arts Catalyst*, UK, (https://www.artscatalyst.org/), *ArtScience Museum*, Singapore, (https://www.marinabaysands.com/museum.html), *Art and Science Collaborations*, EEUU, (http://www.asci.org/), etc.

[4] See Tomasula 2002, p. 137.

order to answer this question, we should further ask what is the new nature of the artifacts and experiences produced and exhibited in these institutions. Let us consider briefly two examples from the history of art that justify this skepticism. Historically, painters have been challenged by two big technical difficulties. On one hand, the mimetic representation of light perception has ever been a quite complex issue, from antiquity to nowadays. On the other hand, to solve the representation of the three-dimensional space onto the two-dimensional plane has also been a very complex task. Regarding the latter issue, it seems obvious for us (in our current context) that the solution could be obtained resorting to the technification of design by means of some artifacts, for instance, perspective machines. At the same time, this technification also depended, in such historical context, on specific theoretic conditions, such as, the process of mathematization of natural sciences, and the revision of the Euclidean geometry, among others. In brief, the geometric perspective was the solution for such a problem.[5] Regarding the first problem, the "painting of light" (impressionism) proposed for its development a long and slow, but fruitful, scientific comprehension of chromatic relationships. In fact, we now know that impressionist painters considered Michel Chevreul's laws of contrast of color and applied them in their projects.[6]

Therefore, A) can we assume that the programs and slogans of these institutions are historically trivial? B) Are they actually dissolving two

[5] See Andersen 2007, p. 19, for instance.

[6] See Roque 1996 and Foa 2015, p. 90.

practices (art and science) which are historically intertwined with each other? In order to answer these questions it is necessary to take into account the discourses and practices of these peculiar institutions, and, of course, the role of the scientific knowledge in their productions. The hypothesis of this paper is, on one hand, that there actually exist substantive differences between these spaces and traditionally ones; however, by virtue of these differences, it is hold, on the other hand, that such identification between art and science is part of a process of dematerialization of art. This process of dematerialization supposes an associated process of *defictionalization* or *demimetization* of arts. The aesthetic consequences of both interlinked tendencies will be valued through the problematization of such identity of art and science. In particular, the absorption of art by theoretic knowledge and political slogans inhibits the possibilities of reorganization and contention of the actual psychological and phenomenological constitution of our minds. This inhibition can be referred to as "reification and naturalization of our human subjective experience".

For the purposes of this paper, we will consider two examples of genetic art. Due to space constraints, it is not possible here to describe all the varieties of scientific and technological art; nevertheless, we believe that the proposed examples will be enough to allow us to highlight some points of interest. In addition, it is our intention to draw some conclusions based on these two examples aimed to point out important current problems.

2.

To address the questions formulated above, we propose to analyze two art genetic's projects developed by Natalie Jeremijenko and Eduardo Kac, respectively. In Eduardo Kac's *Signs of Life*, Natalie Jeremijenko briefly describes what her *OneTree* project consisted in.[7] In line with Walter Benjamin's agenda, Jeremijenko argues that the very ideas of authenticity and individual identity are already obsolete, because nowadays genetic engineering can produce living photocopies of living organisms.[8] To put it in a borgean way, in the genetic engineering world one tree is all trees, and all trees are finally one tree. Or, in more blunt terms, in such a world time has been refuted. But, what would have happened if we had exposed two organic photocopies to different environmental conditions? The problem set out by Jeremijenko to biological determinism could be formulated as follows. If genetics refutes time, then genetics should account for the deep transformations that environment produces in these photocopies. Therefore, is it reasonable to hold genetic determinism? This question concerning individual identity and authenticity is actually subordinated to the dichotomy between freedom and determinism. Jeremijenko's project was divided into two parts. The first one consisted in the production of a thousand of cloned trees which were exhibited as plantlets in the Yerba Buena Centre for the Arts in San Francisco, California, United States, during 1999. The second one was developed in 2001, when each little tree

[7] See Jeremijenko 2007, pp. 301-302.

[8] See Benjamin 2002, p. 103.

was seeded in different public sites of the San Francisco Bay Area. According to Jeremijenko, each of these little trees was nothing but the mimetic living memory of the experiences and contingencies of the public places where they had been seeded.

Let us now introduce a second example of genetic art, the *Genesis* project by Eduardo Kac.[9] In order to fully comprehend it, let us postulate, in the first place, that anything that can be said in any language is translatable into Morse code. Here, the avid readers probably will associate biology to the general concept of *code*. Their intuition is good! As it has been proposed by Claus Emmeche years ago in "*Defining Life. Explaining Emergence*", biology can be thought as a particular form of semiotics or interpretable symbolic information.[10] In his project, Kac sets out a translation from a sentence of Morse codes into DNA base pairs. He calls the obtained DNA base pairs the "artist's gen". At this point, I bet the readers are asking themselves: 'why "*Genesis*"?' Kac called his project *Genesis* since the project consisted in the progressive translation into a genetic code of a verse of the Bible (*Genesis*, 1:26) that says: "Let man have dominion over the fish of the sea, and over the fowl of the air, and over every living thing that moves upon the earth." Yes, this verse was translated into Morse code, and then into a genetic code integrated by Kac himself into a bacterium exhibited online in the OK Centre of Contemporary Art in Linz, Austria. According to Kac, the interest in this biblical verse is to problematize the

[9] See Kac 2007, pp. 164-165.

[10] See Emmeche 1997.

human domain over nature, while, the interest in the Morse code is – attending its power to open the globalization process of Western civilization – its character of epochal symbol. By means of the Internet, the receptors of *Genesis* were able to produce mutations in the bacterium shooting ultraviolet light at it. In this way, according to Kac, the transformation of the genetic code, then the Morse code and, finally, the biblical verse, constitutes a *symbolic gesture*. And Kac concludes: "… It means that we do not accept its meaning in the form we inherited it, and that new meanings emerge as we seek to change it." (Kac, 2007, p. 164).

Despite both projects are displayed as symbolic gestures, they guide our attention to philosophical and political discussions. From a visual and material perspective, Jeremijenko's *OneTree* is composed, at a first stage, of plantlets exhibited altogether, and then, of a series of visually diverse trees isolated in different sites of San Francisco. In Kac's case, we see a little glass cube containing the bacterium, together with projected codes on one of the Centre's walls, and the projection of the bacterium activity on the other wall. In addition, this last projection is already displayed in a monitor screen. Nevertheless, despite being strongly visual, the interpretative key of these projects does not lie strictly in these visual and material aspects, since both artists emphasize, as their point of departure, a theoretic problem: 1) Let us imagine we modify a bacterium, then, can we accept Bible maxims of a living organism on Earth? 2) Let us imagine a numerous set of genetically identical trees that change their properties by virtue of their relationship with different environments, then, can we reasonably say that the behavior of every seeded tree is only ruled by the genetic information?

In this paper, my intention is not to simply point out that both works of art are stimulated by theoretical and political problems (since many artistic productions suppose this kind of incitement), but also to hold that both problems reduce the materiality of these art works to theoretical and political discourses. In fact, it is not possible to assume all those trees as an artistic gesture without para-textual information establishing that, precisely, all those trees are a kind of evidence to Jeremijenko's answer to the second question. Moreover, *Genesis* supposes a discursive play in which every internet user focuses her or his attention on a particular answer to the first question, *i.e.*, the live world, in opposition to the biblical cosmos, is a volatile or contingent conglomeration.

Finally, the Lucy Lippard's thesis on the dematerialization of art is, in general lines, valid; and valid to think the genetic art too.[11] The materiality of art works of genetic art's programs is dissolved as it was also dissolved in conceptual art. However, it is necessary to revisit some aspects of this Lippard's thesis. According to her, conceptual art challenges us since:

> The concept can determine the means of production without affecting the product itself; conceptual art does not need to communicate its concepts. For instance, the audience at Cage concert or at Rainer dance performance will never know what the conceptual framework of the work is. (Lippard, 1971, p. 270).

That is, according to Lippard, the concept does not affect the means of

[11] See Lippard 1971.

production. Nevertheless, if one receptor seeks to fully comprehend the genetic artifacts as art works, then this receptor needs to know the theoretical fundaments and information, as well as, the intentions of their authors. If this is not the case, that is, if the receptor does not have access to the needed information, the absence of concept – which according to Lippard obtrudes the art criticism – triggers a hermeneutical openness, *i.e.*, the experience of the receptor is random. The dematerialization of art in *Genesis* and *OneTree* is not verified by means of the absolute absence of a physical materiality, but by means of the impossibility to interpret the works without their subordination and absorption by an intellectual disposition. I mean, this intellectual disposition is crucial to avoid the entire randomness of the receptor's experiences. Nevertheless, this condition is almost inexpensive, it is just needed to stretch these artifacts to intellectual cognitive arms to make it possible to codify them as works of arts. This supposes our reception to turn into some seriousness associated to theoretical discussions, or merely to a fun – or ludic – play associated to symbolic gestures. In one way or another, genetic art works are "wrapped" in those two questions, 1 and 2. This last point turns still justified by Lippard's thesis:

> During the 1960's, the anti-intellectual, emotional/intuitive processes of art-making typical of the last decades, begun to give way to an ultra-conceptual art that emphasizes the thinking process almost exclusively. Such a trend appears to be provoking a profound dematerialization of art, especially of art as object, and if it continues

> to prevail, it may result in the object's becoming wholly obsolete. (Lippard, 1971, p. 255).

However, Lippard does not recognize a big aesthetic consequence of this dematerialization. The dematerialization implies the impoverishment of the fictional and mimetic character of art. The specific artistic materialization warrants some sort of judge inhibition, in the sense in which Gottlob Frege used "judge".[12] This inhibition triggers a specific cognitive activity which is very different from the activities involved in scientific, philosophical, technological and political practices. Despite the fact that Frege did not speak about images, it is possible to think – from his reflections about truth and reference – that every form of art supposes an indifference to the existence of referred or pictorially represented objects. The works absorb textually or ichnographically diverse aspects of the social world, but we do not put the focus on the existence of the objects. However, this referential or representational information has a relevant and specific role in art. That is, this information is subordinate to our cognitive activity *in totum* (sensibility, intellect, desire or volition); it links us to the social and physical world and, at the same time, it perturbs the links.

Genetic art works stimulate judges, *i.e.*, our intellectual activity. When the judges happen, other kinds of cognitive activities remain the same. In order to hold this thesis, it is needed to explicit some premises about our cognition. Our mind is a plexus of beliefs associated to interests and desires.

[12] See Frege 1960, pp. 62-63.

Then all of these elements are intertwined to reactions, gestures, and feelings. According to different psychological perspectives, the beliefs do not constitute coherent networks of propositional attitudes and, the propositional thinking is, for its part, only one element of the mental plexus.[13] This is due to the fact that, pre-linguistic and pre-reflexive faculties remains from the first years of human socialization despite the emergence and stabilization of the symbolic function. Incoherent beliefs overlap each other; some of them are repressed by others, and all of these dissonances are related to reactions, gestures, volitions and feelings.

3.

Based on the presented discussion, it is possible now to answer the questions A and B. There is a substantive difference between the traditional institutions of art and all of the spaces mentioned above. The theoretical and political slogans of genetic art play a key role in genetic art works. In addition, the role played by the science and programs, or the intentions of the genetic artists are the main factors influencing the dematerialization. This specific form of dematerialization is the key of the programmatic pretensions of the artistic-scientific spaces.

Such dematerialization, which is associated to defictionalization and demimetization, has a profound effect on production and reception. The dematerialization of art naturalizes and reifies what we call, according to

[13] See Festinger 1964, pp. 1-7 and Stern 1998, p. 6-7.

Juan Fló, "human everyday subjective global experience".[14] This expression refers not only to the theoretical comprehension of the everyday world – by means of intuitions, hypothesis and theories–, but also, and especially, to the dissonant beliefs, gestures, reactions, and feelings. Therefore, the dematerialization does not allow the reorganization of the whole plexus of mind. Then, since the global reorganization of the mind is the key aspect of that experience, the aesthetic comprehension of everyday world, associated to the global activity of the mind, does not happen. In this way, the absence of the global movement of the mind entails some kind of naturalization in genetic art, since the artifacts do not allow the openness of the "irrational" dimensions associated to the intellectual ones. Ways of feeling and reacting are assumed, and they do not emerge from the deeper areas of the mind to consciousness. Moreover, the naturalization implies some form of reification, since the receptor merely identifies him or her to slogans or ways of feeling. Therefore, the receptor recognizes his or her proper static subjective experience as objective or external. In brief, the relationship among the whole components of the mind remains ever the same.

To sum up the presented discussion, it can be said that the central role of slogans and theoretic knowledge involved in genetic art works implies its dematerialization. In addition, a key aspect of the dematerialization is the intellectualization of production and reception. In particular, the nucleus of such intellectualization is the stimulus to judge. The judgments stretch our cognitive activity to concepts, beliefs and propositional attitudes, making

[14] See Fló 1967, p. 47, 51.

dissonant relations of beliefs and non-linguistic or propositional mental dimensions to be excluded from the experiences stimulated by the works. Then, the naturalization and reification of our global mental comprehension of everyday world are consequences, of the dematerialization of art. In this way, the static construction of our whole mental experience would seem to be external and ever the same.

It is important to highlight that, in this paper, it was not my intention to deny the aesthetical value of technology and theoretical or political programs in art. In fact, it is worthy to mention here that there actually exist many aesthetical objects that have theoretic stimulus and are strongly influenced by scientific knowledge without resigning their productions to politics, philosophy, technology, or science. The sound sculptures by Lukas Kühne are fruitful examples of the integration of theoretical and technological information in art, but producing, at the same time, interesting integrations of music and sculptures. In this acoustic works, the science claims and intentions are subordinate to play with materiality and mimesis.[15] Finally, in this paper, instead of denying the aesthetical value of technology and theoretical or political programs in art, I aimed to point out a current problem, reflected in the questions that follow. Can we draw some kind of identity of the art history, if we determine the transformation of arts focusing in the dematerialization processes? Moreover, can we comprehend the possibilities of the art criticism through this broken identity of art history? These are two urgent problems for further interdisciplinary studies.

[15] See Lukas Kühne's website, http://www.lukaskuehne.com/

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