

## Body/Machine Configurations: Perspectives on Humanized Technologies in the Electronic Arts

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### Abstract

This paper analyses diverse relationships among body and machine in contemporary electronic arts, through a set of artworks that suggest different perspectives on humanized technologies. The collected artistic projects display particular interactions between the notions of artificial and organic in the present era characterized by information explosion, big data, blockchain and artificial intelligence. From the crossroads between art and technology, the article inquires the intersection of virtual bodies and physical sculptures, organic bodies monitored by technological devices, animated bodies created with computer software and electronic bodies technically sensitive to natural phenomena.

**Keywords:** Arts, Body, Human, Machine, Technology

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### 1. Introduction: Technified Living

Technological devices, tools, media and languages have been transforming every single aspect of our lives. Certainly, the process of humanization of technologies –and the concept of humanized technology itself– has led our societies to imagine a wide range of possible futures: from apocalyptic perspectives that perceive on this phenomenon an actual threat to humankind, which would end up being devoured by the machine, to radically optimistic positions that reveal an apotheotic glorification of Technique.

The historical tensions between the idea of technology and the very notion of human are, in turn, inscribed in specific ways of understanding the artistic categories artificial/organic. While some approaches proclaim a prosthetic conception, since they consider artifacts as extensions of the organic body that may operate as substitutes of its innate needs, other points of view state that humanity entails a permanent exchange between biological faculties and artificial environments. Diego Parente explains:

Broadly speaking, the comparison between the biological sphere and the artificial one admits, as we know, two types of arguments. The first understands the artificial in organic terms; conversely, the second interprets organisms from the vocabulary of design and artifacts. Modern Mechanism is associated with this second version, while the first interpretation is related to the so-called prosthetic conception of the artificial underpinned in part by the German philosophical anthropology of the first half of the 20th century [1].

The concept of “cognitive artifacts” suggested by Donald Norman also reflects on the organism/artifact comparison. Norman argues that man creates artifacts dedicated to stimulate cognition. Cognitive artifacts are thus “artificial devices designed to maintain, display, or operate upon information in order to serve a representational function” [2]. The term not only defines tools and all kinds of physical gadgets, such as paper, pencil, computer and robots, but also circumscribes informational structures

whose “artifactual” characters lies in mental qualities. According to the author, artifacts do not simply involve the strengthening of preexistent cognitive abilities, due to the fact that actually modify the characteristics of the activity that they help to perform:

Much of what will transpire can be called the development of cognitive artifacts, artificial devices that enhance human cognitive capabilities. As we shall see, however, artifacts do not actually change an individual’s capabilities. Rather, they change the nature of the task performed by the person. When the informational and processing structure of the artifact is combined with the task and the informational and processing structure of the human, the result is to expand and enhance cognitive capabilities of the total system of human, task and artifact (...). Artifacts may enhance performance, but as a rule they do not do so by enhancing or amplifying individual abilities. There are artifacts that really do amplify. A megaphone amplifies voice intensity to allow a person’s voice to be heard for a greater distance than otherwise possible (...) But when written language and mathematics enable different performance than possible without their use, they do not do so by amplification. They change the nature of the task being done by the person and, in this way, enhance the overall performance [2].

Assuming Norman’s argument in the opposite direction –while following Parente’s statements about the “des-anthropologization” of the question concerning technology [3]–, it is possible to argue that in the era of big data, blockchain and artificial intelligence, humanization of technologies does not merely imply the projection of a priori human features on technological media, but a substantial reconfiguration of what we understand by human nature. As Parente claims, “what characterizes human beings is to always function under an externalized existence in artificial items whose dynamics impact on the very definition of their nature” [3]. This idea is one of the main topics that have often been addressed by contemporary electronic arts. In the following sections we analyze projects that give rise to different types of body/machine interactions from the crossroads between artistic practices and technological media.

## 2. Fragmented Bodies: Another Cyborg

Three chrome iron sculptures trace curved lines on the exhibition hall. These artworks integrate *Memoria de duración líquida* (Memory of Liquid Duration), a show

dedicated to Azul de Monte’s work at the Centro Cultural Recoleta in Buenos Aires. The Argentine artist conceives her pieces as the expression of the present era, dominated by a technification of our existence that dictates specific rules and values about our own bodies and how they should experience their intimacy [4]. Small cell phones displays were located in each sculpture, as if the artist had made surgical cuts on the bright surface of their metal skin [5]. The videos projected on these tiny screens present a group of loop animations where a head, a hand and a leg stir slowly, giving the impression that the movement is always about to cease. These parts seem to integrate an androgynous body that had been split into fragmented memories of what that creature had been in the past, or yet projections of what that entity could become in some unfamiliar future. At the same time, they could be interpreted as variations of the cyborg, such as those created by Eduardo Kac in his *Time Capsule* (1997), or Stelarc in *Ear on Arm* (2007). In the first one, the Brazilian artist implanted himself a RFID microchip in the ankle during a performance organized at the Centro Cultural Casa das Rosas, in Sao Paulo, which was also broadcasted in television. The chosen microchip was the same one that is frequently used to track pets and it contained a programmed identification number. Wrapped in a biocompatible glass, the implant could be scanned. When that happened, low energy radio signal powered the microchip, which transmitted the code that had been previously recorded. Kac registered his number –both as animal and owner of his name– in a database located in the United States, which according to the artist “was the first instance of a human being added to the database, since this registry was originally designed for identification and recovery of lost animal” [6]. In a similar sense, combining engineering procedures and non-traditional anatomical architecture as well, Stelarc implanted in his left arm a replica of an ear created using living cells. *Ear on arm* also aimed to implant a miniature microphone to permit a wireless connection to the Internet and therefore a universal listening that could allow people in different places to communicate themselves. Together with Kac and Stelarc’s examples, Azul de Monte’s works may be related to the notion of cyborg as paradigms of non-binary connections between machines, organic bodies and information networks. However, unlike the other two cases, in the Argentine pieces the concept of cyborg arises from the combination of cybernetic components and a physical body that is not essentially organic.

An interesting aspect to be considered is that the sculptures exhibited at *Memoria de duración líquida* did not adopt a low tech aesthetic as a strategy to criticize the power of hegemonic technologies in peripheral countries. This has been a frequent tactic used by Latin American artists by means of the recovery of obsolete artifacts or the creation with modest devices. Chilean authors Valentina Montero and Pedro Donoso have called these regional artworks “practices that dismantle”, which are not just a “statement of ecologist politics, or fashionable

trend”, but a “standard practice” arisen by force from precarious economic conditions. This group of practices:

“(…) deploys a deconstructive perspective, seeking to dismantle technological artifacts seen as a semiotic-cultural apparatus, that is, devices whose ideology is inherent to their existence, design and function (…) In this sense, the appropriation of technology, disobeying the factory settings, allows the production of new meanings at local, personal, arbitrary and poetic level. Dismantling a technological device grants the user an opportunity to subvert economic determinations implicit in the design of technological devices, such as their rapid obsolescence. Re-using technology, fixing broken appliances and DIY is a means of subsistence. The invention of witty solutions to repair or to respond to a technical problem is widely practiced in Latin American countries, especially in low-income groups. ‘Gambiarra’ in Brazil, ‘chamullo’ in Chile, ‘chapuza’ in Spain: all these practices find their resonance within the popular folklore. A number of artists have ‘recycled’ them to find alternative sources of knowledge through practices such as DIY, circuit bending, hackmeetings” [7].

But *Memoria de duración líquida* does not give signs of that kind of aesthetics/poetics. In this case, the world without humanity described by De Monte is embodied in works that incorporate technologies through a critical position that merges different temporalities and crosses space boundaries: “a present time that is extended, continuous, and a memory that tries to catch or retain what attempts to escape (…) And the combination of video and sculpture is metaphorically a memory of that line, of what that line used to be” [8]. The technologically fragmented bodies of the videos are embedded in the physical and static bodies of quiescent sculptures; entities that remain motionless although they could have movement by their own.

Thus, *Memoria de duración líquida* suggests an ambiguous exchange between the virtual human image –technified and dehumanized– and the corporeal body of sculptures-objects that tend to be humanized through a potential movement that is constantly about to start. This aspect suggests a whole metaphor about the contemporary ontological ruptures beyond the margins of either entirely physical or virtual bodies.

### 3. Monitored Bodies: Biological and Affective Behaviors on Digital Environments

While some electronic artworks address the ways in which physical bodies hybridize with technological components, giving rise to new versions of cyborg that

lack the organic features, other proposals reconsider the dynamics of biological bodies daily monitored by digital systems. The work of Elisa Giardina Papa, an Italian artist based in Sicily and New York, examines the influence of neoliberal capitalism and its exercise of power over body, sexuality, work and other spheres of private and everyday life.

In *Labor of Sleep – Have you been able to change your habits??* (2017), a series of short videos commissioned by the Whitney Museum of American Art in New York, the artist satirizes self-help apps intended to accompany its users during processes of personal improvement. Giardina Papa’s work has been developed for the Sunset/Sunrise Program, an initiative of the Museum consisting of a series of short videos that can be watched on the web (whitney.org) every day at sunrise and sunset in New York. The videos propose a set of humorous instructions for nine days of exercises. Whitney Museum’s New Media Arts curator Christiane Paul explains that these daily exercises suggested by *Labor of Sleep* “rely on a range of motifs that reveal the absurdities of technologically supported self-optimization” [9].

For instance, in the video corresponding to day one, a computer voice in off warns: “It s okay if you don’t sleep right now and it s okay if you do”. Two red-haired ponytails emerge from a wall with no spatial references and move left to right following the rhythm of the same voice: “Breath/pause, breath/pause, breath/pause. Have you been able to change your habits?”. By the end of the video of day three, the voice prevents the user: “You scored five, your sleep efficiency is 53% lower than average”.

Based on the hypothesis that sleep has become a platform for collecting data on behavior patterns, since it turns the moment of rest into a new form of labor (or extraction), the piece suggests that contemporary digital technologies reveal a paradoxical logic: “digital devices function as both a poison and its remedy, providing relief for the time they take away” [10]. And the artist adds: “The video clips illustrate how we use technologies to regulate human sleeping habits within the rhythms of a wider system— one that includes humans and non-humans, extending from organic matter to digital devices themselves” [10]. From this perspective, the neoliberal system turns sleep into a passive expression of labor. Even asleep, the body could be seen as a production machine. The biological organism is computerized through behavioral and biological data that regulate its natural performance, whereas technology mimetically replicates certain human manners.

Similar topics have been investigated in *Technologies of Care* (2016). The piece is part of Rhizome’s Download series, a group of commissions that that includes posted files, the act of downloading them and the user’s/audience desktop as a feasible exhibition space. Giardina Papa’s work documentes new ways in which nowadays Internet platforms are changing labor, as well as the kinds of jobs that people are being currently able to offer even as forms of immaterial services provided from any country around

the world. Among the anonymous freelance workers that the video compiles, there are interviews to a nail wrap designer, a creator of digital pictures for advertising that companies use on their web pages, a fairytale author and three other real freelancers. Besides, the piece comprises a non-human caregiver, which is a virtual boyfriend/girlfriend with a computer-generated voice. By the use of different apps and digital platforms, these workers –including the bot–provide their clients with emotional company, erotic simulations and affective services. The seven videos are contained in a 26MB ZIP file and each of them is saved in its own folder. Throughout a conversation held between Aude Launay and Marie Lechner, they mention the notion of virtual immigrants that Giardina puts to the fore when she refers to her piece: “these workers all operate via microwork platforms usually from their home country (...) but are paid in dollars as most of the people or companies that hire them are located in the United States, Canada and the United Kingdom” [11]. In fact, Giardina Papa has really hired herself the caregivers that she interviewed, who live in Brazil, Venezuela, the Philippines, Greece and the United States. This aspect turns the artist into a client that pays to obtain the same material that would afterwards use to make her own work. Therefore, she becomes a digital worker as well.

#### 4. Geopoetic Bodies: Sensitively Humanized Technologies

If we have so far referred to humanized technology in connection with artificial intelligence, surveillance and data networks, another line of research involves practices that highlight a similar phenomenon through the development of sensitive technologies. That is the case of *Máquinas de lo invisible* (Machines of the Invisible), a work by the Mexican artist based in Buenos Aires Gabriela Munguía. The aim of the project was to create a series of site-specific installations integrated by devices specially designed to detect and amplify all sorts of environmental magnitudes that are gradually transforming our planet’s geological condition. By means of construction of sound and lightning machines that combine DIY technologies and non-hegemonic electronics, Munguía has carried out what she calls different territorial acupuncture [12]. These points capture, process and transform data from the natural environment where they are installed, such as electromagnetism and solar radiation, among other physical values that remain mostly hidden from everyday perception.

In *Resiliencia #1: sonidos del viento* (Resilience #1: Sounds of the Wind), produced at the Brazilian municipality of Altamira, the artist built a meteorological antenna that captured changes in wind flow speed, atmospheric pressure, temperature and humidity. The collected data also entailed material for further performances at the same territory. One of them resulted

in a mechanical sound object, conceived as a small musical box, which reproduced the information previously gathered and encoded in perforations done by the artist on paper. The second version of the piece, entitled *Resiliencia #1: conversaciones geomorfológicas* (Resilience #1: Geomorphologic Conversations), was developed at the rural area of the Swiss village of Tenna and exhibited at ART SAFIENTAL (Biennale for Land and Environmental Art). Munguía created a measuring and sonorization device that was placed at the mountainous landscape. When the wind blew, it activated the machinery. Local stones collided with bronze plates and then they visually and resoundingly materialized the erosion processes through the metrics, resonances and temporalities of the landscape.

The notion of resilience refers to the adaptability of human beings to all kinds of hostile or unfavorable outcomes in their environment. In *Máquinas de lo invisible*, the reconciliation between the individual and its ecosystem is mediated by a set of devices, actions and interventions in nature that operate as sensitively humanized technologies which promote the co-creation and cooperation between human and non-human entities.

Chilean artist Cristóbal Cea is also inspired by the experimentation with sensitive technologies resulting from natural phenomena, as well as social ones: floods, fires and protests, among other violent or catastrophic events. Cea digitally recreates these situations announced on the news using various techniques such as rotoscoping and fluid simulation. Consequently, he turns them into 3D computer animations, installations and site specifics that seek to save a variety of images that would otherwise remain forgotten by a culture absorbed in the informational chaos of our present. The video entitled *The Church at Flatiron* (2016) is a playlist of videos that reconstruct the fire occurred in Manhattan in 2016, which ended up destroying the Serbian Orthodox Cathedral of Saint Saba. Through the use of Matchmoving 3D post-production technique, the artist recreates the tragedy from virtual cameras and even as the subjective camera of a mobile phone was spontaneously shooting the video. In another work, called *Arca (de Caín)* [Ark (Cain’s)] (2017), Cea presents a four part video projection related to the National Museum of Fine Arts in Chile, the same location where the work was screened during 13th *Bienal de Artes Mediales* in Santiago de Chile. One of the videos displayed a slow-motion tour around the exhibition halls while a voice in off narrated certain excerpts of the Universal Flood, which were alternated with the history of the sculptures of the museum’s collection. Unexpectedly, a huge flow of water begins to fall down the stairs, enters through the skylights and floods the entire building. The set of screens that completed the installation exhibited digital models of the sculptures, whose images were realized using photogrammetry software throughout the collaboration between the artist and the museum’s conservation department. The artist hence explores the creative possibilities offered by the latest technologies without glorifying these technological media. Instead, his

work is focused on the conjunction of physical environment and the architecture of digital spaces. In Cea's words, animation has the potential to act as a bridge between these spheres, reviving stories, phenomena and significant events that history intends to overlook [13]. He states that the notion of distance is a central aspect of his investigation: "the inconsolable distance between spectator and the geography of the events, the very human need to try to bridge this divide, and rescue this news, this floods, this protests and fires, from the oblivion and carelessness specific to a time –our time–, when the flow of images seems to overflow our capacity to care for what they represent" [13].

New media such as 3D animation would help to bridge the gap between space and time. Seen in this way, the work becomes a kind of interface that mediates the relationship among spectators, real events that have formerly occurred and simulated realities designed with the aid of technologies.

## 5. Last considerations. Art as a loophole

Throughout this article we have discussed different strategies adopted by technological poetics to assume critical positions regarding complex relationships implied in body/machine binomial: virtual bodies fragmented into motionless physical entities; organic bodies controlled by the rhythm of ubiquitous technological devices that monitor our lives; simulated bodies through computer animation techniques; electronic bodies technologically sensitive to the invisible magnitudes recorded at the territory in which they are located.

The role played by artistic practices facing the uncertainty that characterizes our times should be likewise inquired, particularly in an era determined by the information explosion, the abundance of data, the growth of artificial intelligences and the increasing humanized technologies. Does art embodies a loophole or a shelter where one can think and produce critically even being immerse in the core of these processes of change? Or instead, will artistic ways of reflection and creation be also inexorably transformed in an unknown direction? The challenge seems to be to elucidate how to keep the mandatory distance with our own contemporaneity in order to identify subtle changes, barely noticeable, right from the border between the elusive instant of the present and the slippery slope of the past, which is continuously being left behind.

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