

Eduardo Kac

sounding out the non-binary

The Archive of Digital Art, 06/2022

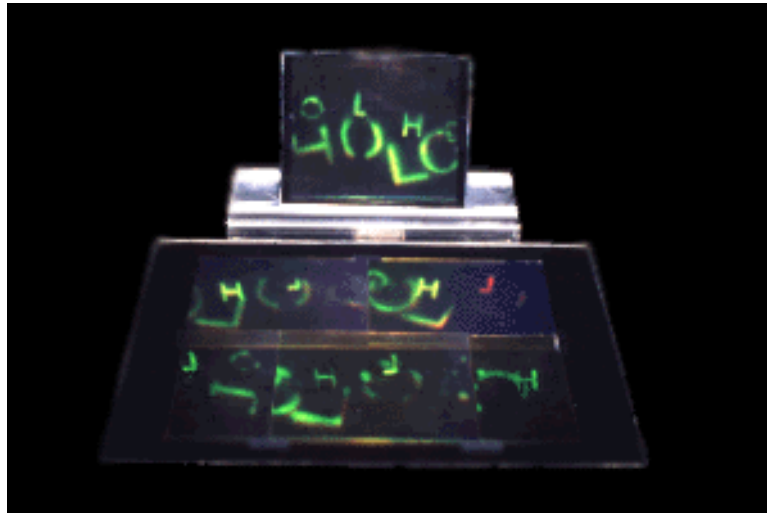
Text by Carla Zamora and Samantha Mealing, Interview on Time Capsule by Samantha Mealing, Rachel de Joode and Herbert Gmoser.

“In the course of pursuing Bio Art we have transformed life from mythology to a medium. We have transformed this vision of new beings from legends to life. It is my belief that in a world in which we destroy at least one species every day, one role that an artist can assert is to expand by diversity, to produce new types of relationships, to configure, to envision to bring about new modalities of networking in which these old fashion separations between the living and non-living, the local and the remote, the biological and robotic are resolved. And a new model of interspecies communication can be brought to the fore and better correspond to the life that we seek in the 21st century.”¹

Eduardo Kac and his work is probably one of the best examples to demonstrate the close connection between Bio Art and Digital Art. The internationally renowned American artist originally from Brazil and father of coining art genres like Telepresence and Bio Art, can look back to more than 40 years of artistic practice starting in the '80s. Being visionary already before the era of internet, he has always been looking for an “intersubjective artform for the media age”. Not only he wanted to “reflect, but especially to actively participate in the creation of the new world” that he was anticipating.

Starting his artistic practice with public performances in the early '80s, Kac's background is informed by philosophy and literature, especially poetry, which plays a central role in all his oeuvre. Language in various poetic and visual forms defined his early work, such as the holographic poem (holopoem) HOLO/OLHO (Holo/Eye) from 1993 or Letter from 1996. In visual texts, prints, small sculptures, graffiti and other mixed media works, Kac already expressed his special interest in communication and aimed to create the experience of language as something that is in constant flow and transformation.

¹ Chicago Humanities Festival. “Eduardo Kac: Transgenic Artist” YouTube, 9. Dec. 2013, <https://www.youtube.com/watch?v=3LSJVD0m1Mg>



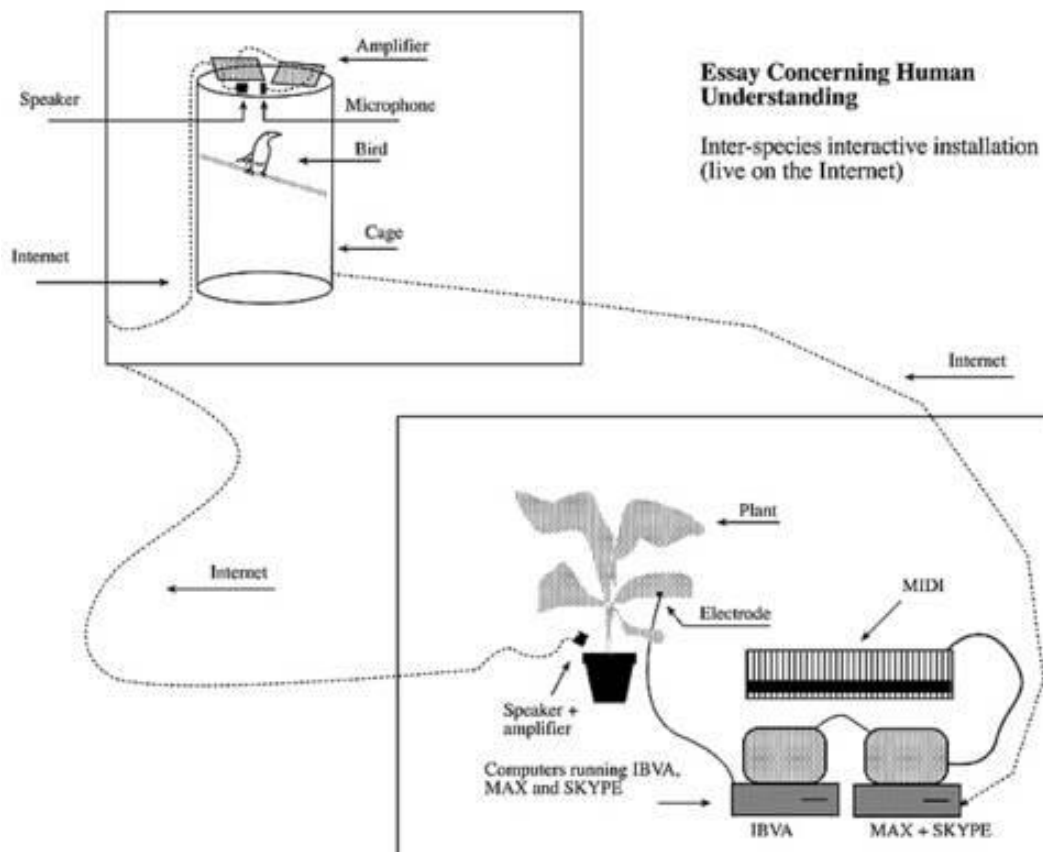
HOLO/OLHO (Holo/Eye), 1983, © Eduardo Kac, Collection UECLAA, University of Essex, UK
From the Holopoetry series (1983-1993). Reflection holograms mounted on wood and plexiglass.
Reading becomes a kinesthetic experience through bodily motion.

Major technological breakthroughs in the '80s, such as the rise of the personal computer and the transition to a global network through the internet, inspired Kac to explore the potential connections between artificial and biological systems - and how he, as an artist, could apply these new modalities of communication in innovative and compelling ways. Reflecting these new exchanges between digital and organic networks, Telepresence Art emerged as a new cultural experience, based on the integration of telecommunications, networks, robotics, human-machine interfaces, and computers.²

"To me, telepresence art creates a unique context in which participants are invited to experience invented remote worlds from perspectives and scales different than human, as perceived through the sensorial apparatus of telerobots. The rhythms created by this new art will be accented by intuitive interfaces, linking and networking concepts, telerobot design, and remote environment construction."³

² Ibid.

³ Kac, Eduardo. "Telepresence Art", originally published in English and German in Teleskulptur, Richard Kriesche, Editor (Graz, Austria: Kulturdata, 1993), pp. 48-72. A
https://www.ekac.org/telepresence.art_94.html



Essay Concerning Human Understanding (1994) © Eduardo Kac, Collection UECLAA, University of Essex, UK

this work is an “artwork for non-humans”, a live, bi-directional, telematic, sonic installation where a canary communicates via a regular phone line with a plant that was placed 600 miles away.

Eduardo Kac’s radical blend of artificial and biological networks has frequently caused international recognition, controversy and conversation. In 1997, Kac implanted a RFID microchip into his leg while being live broadcasted on TV. The event, entitled Time Capsule, initiated a complex, multi-layered situation which explores the human body as a hub for the real time exchange of incoming and outgoing information via internet. Touching on notions of materiality, memory and corporeality, Time Capsule heralded a new era of artistic creation and introduced the genre of Bio Art. Using biology as subject and/or medium, the advent of Bio Art opened up a new understanding of what life in the 21st century will or could be. Time Capsule contextualized a new dialogue on the potential digital hybridization of previously biologically exclusive phenomena. One which continues today as humanity depends on the internet in the face of environmental threat and the extension of science through the creative experimentation with living art.⁴⁵

⁴ Kac, Eduardo. Time Capsule: Eduardo Kac on telepresence in memory, corporeality, and augmentation. Interview. By Samantha Mealing Et al. 17 January 2021.

⁵ Editor’s note:

Below you can read an excerpt of the extensive interview: “Time Capsule: Eduardo Kac on telepresence in memory, corporeality, and augmentation”, led by Samantha Mealing MA. This interview was made possible

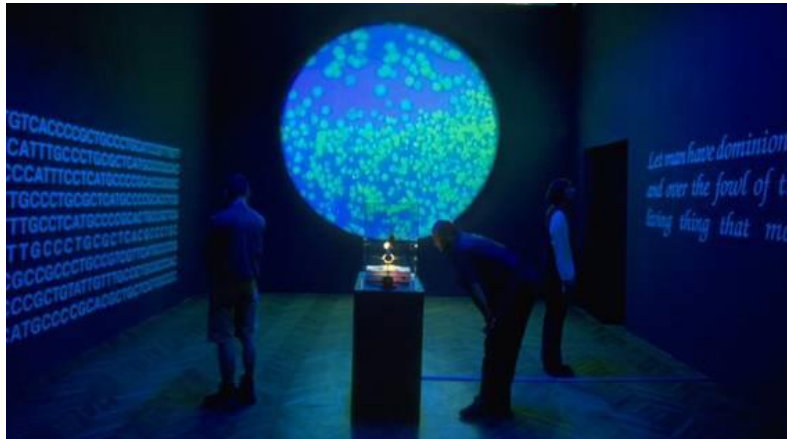


The Time Capsule (1997) © Eduardo Kac, Collection UECLAA, University of Essex, UK

Following Time Capsule, Eduardo Kac began to explore genetics as a medium. Published 1998 in Leonardo Electronic Almanac, Kac's manifesto "Transgenic Art", described the developing genre as the creation or invention of new living beings, i.e. organic life forms through the use of genetic engineering techniques should be a central aim of the artist. However, Kac's idea is not to take the role of a divine creator, but to question the power and cultural impact of biotechnology and, on the other hand, to "call for a dialogical relationship between artist, creature/artwork, and those who come in contact with".⁶

through her research on Eduardo Kac for her Master Thesis in Media Arts Histories program at Danube University Krems, Austria. You can also find and download the full interview [on ADA](#).

⁶ Kac, Eduardo. "Telepresence Art", originally published in English and German in Teleskulptur, Richard Kriesche, Editor (Graz, Austria: Kulturdata, 1993), pp. 48-72. A https://www.ekac.org/telepresence.art_94.html



Genesis (1999) © Eduardo Kac, Collection UECLAA, University of Essex, UK

"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." This sentence from the biblical book of Genesis was translated into morse code and then converted into DNA base pairs, what Kac called the "artist's gene".

Genesis was the first transgenic work that was presented publicly at Ars Electronica 1999. An example of living artwork, Genesis is a bacteria developed from the "artist's gene" - a synthetic gene created by DNA base pairs made from Morse Code translated from biblical text. The bacterial growth is then mutated by gallery visitors switching on fluorescent light.⁷ Genesis was soon followed up by the infamous GFP Bunny (2000), where the gene of a rabbit called Alba was modified with EGFP, a synthetic mutation of the original wild-type green fluorescent gene found in the jellyfish *Aequorea Victoria*. Kac created a series of works using GFP (green fluorescent protein), proposing an "organism - mammal - ecology" where all creatures glow green under a blacklight. His interest was not to create "genetic objects", but "transgenic social subjects" that can be integrated into our society and environment in a responsible manner.



GFP Bunny (2000) © Eduardo Kac, Collection UECLAA, University of Essex, UK

⁷ Kac, Eduardo. "Genesis", <https://www.ekac.org/geninfo2.html>

“The extension of the concepts of biodiversity and interspecies communication;(…) the examination of the notions of normalcy, heterogeneity, purity, hybridity, and otherness; (…) the expansion of the present practical and conceptual boundaries of artmaking to incorporate life invention” (...)⁸

Kac’s recent works of Space Art reflect the human migration into space by examining, “a new global space culture “presently emerging in the twenty-first century through the collective explorations and often collaborative efforts of spacefaring nations.”⁹ In 2017, Eduardo teamed up with French astronaut Thomas Pesquet to create Inner Telescope. Realized by Pesquet aboard the International Space Station, Inner Telescope is an anamorphic object formed in zero-gravity from materials inside the space station.

Similar to Kac’s holographic poetry, the object is a sculpted word which morphs into another form through various visual angles. The composition of three letters "M", "O", "I" ("moi" is French for “me/myself”) changes into the image of a human figure with its umbilical cord cut.

Or, the 2019 sculpture Adsum (2019), is a glass cube engraved with a new highly symbolic anamorphic typography which can be read from multiple perspectives. On February 19, 2022 Adsum flew on the rocket Cygnus NG-17 to the International Space Station.

Sometimes in a poetic, subtle way, sometimes in a radical way - over the past 40 years, Kac's work has consistently confronted with complex issues and challenged us to transcend our notions of human limitations.

According to Kac, this elegant juxtaposition between image, word, identity and origin “leads us to rethink our relationship with the world and our position in the Universe.”¹⁰

Eduardo Kac has been internationally active as an artist, poet, lecturer, and researcher for over 40 years. In each of these roles, Kac proposes radical, philosophical, and thought-provoking poetic metaphors concerning our present and immediate future. His body of work demonstrates an innovative perspective that blurs traditional taxonomies between the natural and the artificial into dynamic, new communication structures. Kac’s expansion of biological phenomena layers natural science and technology in ways that reorient humanity’s place within the vast and complex networks of life. His works have been shown in over 100 exhibitions, events and festivals from which a selection can be found on his profile on ADA or website.

⁸ Kac, Eduardo. “GFP Bunny”, <https://www.ekac.org/gfpbunny.html#gfpbunnyanchor>

⁹ Kac, Eduardo. “Space Poetry”, <http://www.ekac.org/spacepoetry.html>

¹⁰ Kac, Eduardo In: Inner Telescope, https://ekac.org/inner_telescope-new.html

INTERVIEW WITH EDUARDO KAC:

Excerpt taken from the interview with Eduardo Kac (EK) conducted by Samantha Mealing (SM), on the work Time Capsule. The full interview can be found on ADA.

SM: Given the physical changes of technology since 1997, do you think Time Capsule's implantation signified a transition to a more transhuman integration of technology?

EK: I, personally, am not a subscriber to the transhuman agenda per se. Time Capsule springs from my preceding body of work, and, in retrospect, we can clearly see that it opened up a new phase in my practice. In a sense, it could be understood as a transitioning piece because it's the artwork in the context of which I created the term bioart to signal a transition from a purely digital framing to an embodied, biologically driven approach. In a sense, it was not quite yet the type of work that I really wanted to focus on within the field I was opening. For me, 1998 was a more introspective year when I tried to formulate more clearly what it was exactly that I wanted to do within that new field. And at the end of the year, I published the Transgenic Art manifesto, and I was already working on Genesis because, you know, these projects take a while. They are not made in the month that you show them, right? It takes a long time to assemble all the tools and the people, processes, resources, and venues; it takes time to bring it all together. In 1999, I was able to exhibit Genesis at Ars Electronica. There is a very interesting relationship between Time Capsule and Genesis because they both use the living organism as the substrate in which information is stored, with the exception that Genesis takes it further by enabling the transformation of that stored information and the retrieval of the transformed information. Because in Time Capsule you could store and retrieve, but you couldn't edit or change it. In Genesis, you can store, change, and retrieve. So, in a sense, it's another development within that approach that has implications in its own right. But the point is that Time Capsule involves an element of telepresence, which I have been developing, in the sense that I attribute to it, since 1986. Our videoconference, right here, right now, via Google Meet, is not telepresence; this is telecommunications. This is like talking on the phone, but with images. To me, telepresence is the addition of a physical dimension to telecommunications, which telecommunications before 1986 could not do. I did it — in the context of art. So, to me, telepresence is the coupling of telecommunications with the physical element. So, for example, if you have a mug or a pen in front of you, through telepresence, I could move it. I could move it a centimeter to the left where you are, from

here, right now. So, it's going through the screen and exerting a sense of physicality that the transmission of sound, text, and image on a screen cannot do.

SM: I do have one question, and I think it's central to the thesis, so I would like to ask it and forgive me if you've already answered the question. Going back to transhumanism and posthumanism. So, given your perspective on transhumanism, does that affect your perspective on posthumanism? And do you apply the same kind of perspective towards posthumanism with Time Capsule?

EK: I don't really subscribe to the transhumanism agenda. But posthumanism is different. Because, to me, posthumanism seeks to offer a non-anthropocentric perspective; what we used to understand by 'human' is displaced. It's not that in posthumanism there is no human anymore; we simply move past the previous understanding of the human in which the human exerted a central role or was understood as a discrete entity. Before, there was a perceived hierarchy, and somehow, we were at the top of that hierarchy. To me, the posthuman represents a decentering, a surpassing of the centrality of the human.

Therefore, the "post" is a new condition, and it's one in which, yes, technology plays a role. But so does our relationship with nonhumans. And we begin to evolve a model that is not binary, which is something that I've been talking about for decades, not just when, you know, these issues came to light more recently. I have been talking about overcoming this polarity, this way of thinking that is predicated on oppositions for a very long time. And, at least the Western world has operated, not only intellectually, but also materially, predicated on oppositions with grave consequences. We have defined the human in opposition to technology. We have defined the human in opposition to animality. We have ascribed humanity to certain humans and not to others. So, these modes of approaching the world predicated on oppositions have enabled the construction of these hierarchies. The idea I have always defended and worked towards is that we would develop a model predicated on the principle of networking. Network is a noun and a verb. We understand the human as part of an ecology, as part of a continuum. And we also understand that the human is now rethought in light of a lot of what we have learned in the recent decades. We used to understand the human as an entity in its own right. Not anymore.