Technical Objects in Art, a Methodological Approach

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Introduction

In 1986, Arjun Appadurai reminded us that objects possess dynamic and multifaceted existences. Objects, and in the case that concerns me technical objects in media art practice, are rich with social, affective, and even sensitive dimensions. This has become common knowledge for art and science historians working through paradigms such as new materialism, thing theory, and actor-network theory (ANT).[1]

For the purposes of this essay, I will be introducing the concept "technical objects" to dialogues in media art history and curatorial studies. I am drawing from the research of media theorist and sociologist Ramon Amaro on critical theory and digital culture, as well as the insights of philosopher Gilbert Simondon, to define this term. In my crafting, the term technical objects encompasses both works of art that serve as tools and tools that play a role in or contribute to performance, media, or computational works.[2]

Technical objects, in the way that I am proposing we understand them, have the ability to transition from their initial purposes to a second life (Appadurai, 1986) through various means such as their reuse, reappropriation, and reinvention.

[1] Consider the insights provided by scholars like Rosi Braidotti (2013), who underscores the interconnectedness between human and non-human entities within new materialist discourse. Similarly, Jane Bennett (2009) explores the notion that objects possess a vitality or agency that impacts human behavior and political dynamics. Moreover, John Law (1992) delves into the implications of ANT for understanding the intricacies of ordering, strategizing, and navigating heterogeneity within networks.

[2] In this context, I am using the term "tool" over other concepts because it aligns with my view technological innovation as a multifaceted outcome. Drawing from the research of Adele E. Clark and Joan H. Fujimura (1992), I perceive innovation as a complex social formation that evolves over time. Rather than viewing a tool as a singular object, I see it as part of a broader network.

The revaluation of objects has been a significant focus for art historians, particularly since the early 20th century. Marcel Duchamp's introduction of readymades marked a turning point, challenging conventional notions of art and its creation. Subsequently, movements like the Situationist International and their use of *détournement*,[3] along with the Pop Art movement, further reshaped artistic discourse by incorporating elements of mass-produced and popular culture into their work (Krauss, 1986).

In this essay, I intend to delve into the relatively unexplored realm of the second life of technical objects in artworks and artistic practice. My objective is to develop a methodological framework for approaching technical objects in art, emphasizing a perspective grounded in care and recognizing the interconnectedness of human and non-human actants. Central to my investigation is the concept of transductive exchange, considering both the abstract and concrete dimensions of technical objects.

Building upon María Puig de la Bellacasa's insightful critique of Bruno Latour's concept of "matters of concern," which she reimagines as "matters of care" through a feminist lens, I propose to base this methodology for researching technical objects in art in situated knowledge.

To exemplify this methodology, I will analyze Arcangelo Constantini's 2009 artwork *HoloDecon* as a case study. Through this examination, I seek to unpack the significance of

[3] *Détournement* refers to the practice of appropriating existing cultural artifacts or elements of the media and reusing them in a way that subverts their original meaning or intention. It involves taking fragments of pre-existing artworks, advertisements, slogans, or other forms of mass culture and repurposing them to create new works with critical messages. *Détournement* aims to disrupt the dominant narrative propagated by mainstream media and challenge the capitalist system by exposing its contradictions and absurdities.

technical objects within what I term the *chatarrerx* community,[4] exploring their relationship with discussions surrounding extractivism, climate crises, and media art.

Furthermore, throughout this paper, I propose we redefine the technical object as a concept relevant to artistic production. This redefinition emphasizes the critical reworking and reverse engineering of existing media tools within the context of art.

On technical objects

In his book *The Black Technical Object: On Machine Learning and the Aspiration of Black Being,* (2023), Ramon Amaro approaches technical objects as tools imbued with technological, social, and cultural significance. These tools may include digital devices, algorithms, data sets, and other elements of computational systems. Amaro's perspective emphasizes the interconnectedness of technical objects within broader socio-political contexts, particularly in relation to issues of race, identity, and power dynamics. While Amaro does not offer a precise definition of the technical object, given the unfolding of this research, it becomes evident that his conceptualization is influenced by the work of philosopher Gilbert Simondon.[5]

Similar to Ramon Amaro, Simondon's seminal text *Du Mode d'existence des Objets Techniques* (1958) has been instrumental in shaping my understanding of the technical object. According to this book, technical objects are tools that emerge from a process of individuation,

[4] The artistic community that I am interested in exploring is one that hasn't been named officially just yet, however I am referring to them as chatarrerxs. This term, derived from scrap dealers, has historically been used pejoratively within the Mexican art circuit, particularly in reference to artists who engage in reappropriation techniques such as dismantling machines or repurposing them in unconventional ways. Over time, however, chatarrerx has been embraced by artists who actively seek out discarded electronics in dumpsters or antique markets as part of their practice and their political ideology. It's worth noting that chatarrerx is a term I am introducing as part of a research that is still under development.

[5] In Chapter 7, titled *A Correction of Metaphysics and the Concept of Black Substance*, the author draws on Simondon's research, particularly in his analysis of the process of individuation, which he analyzes extensively. Additionally, the author references Simondon's definition of the concept of "pathological." Both of these concepts are later on put into tension while he addresses "the process of becoming Black and the aesthetics of Blackness." (p. 224)

where they evolve from an initial state of potentiality to a more differentiated and stable form. These objects are characterized by their integration of various components and their capacity to mediate between humans and their environment.

According to Simondon, the process by which technical objects gain individuation is through transduction. The transductive process involves the integration of heterogeneous elements into a coherent whole, as well as the emergence of new structures and functionalities that result from their interaction. In this way, as the technical object interacts with its surroundings, it undergoes continual adaptation and modification, shaping and being shaped by its context. This ongoing process of interaction and feedback contributes to the technical object's individuation and evolution over time.

Simondon distinguishes between two modes of formation of the technical object: abstract and concrete. Abstract technical objects are a primitive form of the technical object in which "each theoretical and material unity is treated as an absolute that has an intrinsic perfection of its own that needs to be constituted as a closed system in order to function." (1958, p.14) In other words, abstract technical objects are the conceptual or theoretical aspects of technical systems. They exist at the level of ideas, designs, or plans before they are implemented or instantiated in physical form. Abstract technical objects encompass the principles, theories, and mathematical models that guide the creation and development of concrete technical objects. They are often expressed through diagrams, blueprints, algorithms, or other symbolic representations.

Conversely, concrete technical objects are the physical manifestations or embodiments of technical systems. They are the actual tools that are constructed and put into operation in the real world. Concrete technical objects embody the ideas and principles of abstract technical objects but also incorporate material properties, components, and functionalities. They interact with their

environment, users, and other technical objects, exhibiting behaviors and characteristics that emerge from their physical instantiation. It is important to mention that this transductive process continues to evolve as the technical object becomes in contact with new environments, new users, and new technical objects.

This dual condition becomes evident in Amaro's research, particularly in his examination of the systems underpinning the development of digital tools and, specifically, of machine learning. Amaro approaches the study of machine learning from two angles: a functional examination of its operations and a theoretical exploration with the goal of understanding its potential impact on reshaping Black being. Among the questions he poses in his research, I would like to highlight the following one where, inspired by Stefano Harney and Fred Moten, he asks: "what if the Black technical object were to take a right of refusal to racial perception, and aspire to be that which is out of reach of the negating factors of race?" (Amaro, 2023, p.15)

In Amaro's view, it is possible to challenge and subvert existing power structures, including those rooted in racism and sexism, within a technical object by tactically[6] acting upon the individuation process while being aware that "the individual[7] is always incomplete and finds themselves continually involved in new processes of becoming". (Amaro, 2023, p.224) In essence, he challenges Simondon's concept of individuation by suggesting that this process is never complete. I would even go as far as to suggest that technical objects can continuously acquire new characteristics and even develop new sensibilities through interventions in their transductive exchanges.

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[6] I consider the notion of the tactical versus the strategic to be essential here, since it acknowledges the fact that these possible ways of acting upon the technical objects can only be used for a limited period of time before being co-opted by the powers that be. Echoing Michel De Certau insights in *The Practice of Everyday Life* (1984) where he suggests that while strategy adheres to political, economic, or scientific logic, tactics are inherently contextual. They capitalize on specific situations to disrupt norms, ingrained within everyday life where their effectiveness stems from their adaptability and ability to exploit circumstances for both combat and pleasure.

[7] And technical objects for that matter.

- **Transduction and socio-technical networks**

While all technical objects are, indeed, objects, not all objects are technical objects. What sets them apart is their integration within larger socio-technical networks as well as the transductive exchange they are part of. In this context, I propose we understand technical objects as actants[8] instead of passive tools. Building on Amaro's insights regarding individuation, I propose shifting our attention towards their transductive exchange in order to reveal the potential of art as tools and tools that play a role in or contribute to art production.

Within his research around actor-network theory (AND) Bruno Latour defines an actant as an entity or element that has agency and can act or exerts influence within a network. Actants can be human or non-human entities, such as people, objects, technologies, organizations, discourses, or even abstract concepts. This term is used to emphasize the idea that both human and non-human entities have the capacity to shape and mediate social interactions and outcomes within socio-technical networks.[9] Similarly to Amaro and Simondon, Latour introduces the notion of interconnectedness as essential to unpack social phenomena by focusing on relational ontology. (Jóhannesson and Bærenholdt, 2020)

Furthermore, I believe it is crucial to incorporate the role that actants have within socio-technical networks as they undergo the transductive exchange, which intricately connects them. And, for the issues concerning this essay, the socio-technical networks that intersect with artistic practice, climate crises, and technical objects.

[8] Drawing from actor-network theory (ANT) (Latour, 1987, 2005; Law, 1992).
[9] In this context, I define a socio-technical network as a system where social and technical elements interact and influence each other, shaping behaviors, practices, and outcomes. (Latour, 1987, 2005)

- **Matters of care and non-human actants**

In her research paper *Matters of Care in Technoscience: Assembling Neglected Things* (2011) and later on in the book *Matters of Care* (2017) María Puig de la Bellacasa introduces a, much needed, feminist perspective to Latour's work around the notions of *matters of concern*[10] and "the social and ethico-political implications of the interdisciplinary field of STS[11]". (2011, p.86). Puig de la Bellacasa makes a case for escalating Latour's matters of concern into matters of care to problematize and expand the relationships between actants within a socio-technical network.

Puig de la Bellacasa argues that care entails a deep commitment to something, expressed through the active verb 'to care.' It is not merely about being concerned but involves tangible actions and material engagements. Understanding care as both an ethical and politically charged practice aligns with feminist scholarship[12] that emphasizes the significance of often undervalued forms of labor.

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[10] Latour (1993) defined matters of concern as phenomena that are significant and worthy of attention within a particular context. These are not just matters of interest or curiosity but are instead subjects that have implications for action, decision-making, or understanding. Latour emphasizes the importance of recognizing and engaging with matters of concern in order to fully grasp the complexity of social, political, and environmental dynamics.

[11] Science and technology studies.

[12] Puig de la Bellacasa dedicates an extensive part of the introduction to her book *Matters of Care* (2017) to name the authors who have incorporated care as a field of study to various areas:

> *With or beyond the ethics of care, practices and principles of care have been explored critically in the domains of critical psychology (Noddings 1984), political theory (Tronto 1993), justice (Engster 2009), citizenship (Kershaw 2005; Sevenhuijsen 1998), migration and labor studies (Boris and Rhacel 2010), care in business ethics and economics (Gatzia 2011), scientific choices for development (Nair 2001), in sociologies and anthropologies of health work and sciences (Latimer 2000; Mol 2008; Mol, Moser, and Pols 2010; Lappé, forthcoming), disability studies and activism (Sánchez Criado, Rodríguez-Giralt, and Mencaroni, 2016), care in accountability procedures (Jerak-Zuiderent 2015), food politics (Abbots, Lavis, and Attala 2015), as an ethics for animal rights (Donovan and Adams 2010), and in farming practices (Singleton and Law 2013)— not to speak of research rooted in grassroots activism (Precarias a la Deriva 2004; Barbagallo and Federici 2012), social and health work, and policy (Hankivsky 2004). Closer to the specific trajectories of this book, care is also explored as a significant notion to appreciate affective and ethico-political dimensions in practices of knowledge and scientific work (Rose 1983, 1994; Despret 2004; Muller 2012; Suzuki 2015; Perez-Bustos 2014) and as a politics in technoscience (Martin, Myers, and Viseu 2015) with a vital significance for ecology (Curtin 1993) and human–non-human relations in naturecultural worlds (Haraway 2011; Van Dooren 2014; Kirksey, 2015).* (p. 2-3)

This perspective resonates with Amaro's research, particularly in bringing oppressed communities and their identities to the forefront of the conversation around technical objects. Simultaneously, it involves engaging with other non-human actants that are at the core of the transductive exchange. In her research, Puig de la Bellacasa advocates for re-affecting non-human actants highlighting the need to reconsider the ways in which we relate to them.

Caring involves more than just a political or scientific engagement; it encompasses personal, affective, and even intimate connections with the objects/subjects of our attention. However, within academic and scientific realms, there is often a tendency to sanitize or rationalize these engagements, overlooking their emotional and relational aspects. Caring for non-human entities, whether animal, plant, or mineral, demands a deliberate effort to recognize their agency and autonomy. This form of care involves a reciprocal relationship where both parties are transformed through their interactions, an idea that connects with ANT[13] and transduction while strengthening the responsibility we, as human actants, have in these exchanges.

While Puig de la Bellacasa's framework primarily centers on the care of animal beings, I advocate for an expanded perspective that includes minerals as well, particularly in the context of technical objects and their relationship with extractivist practices and precarized labor.

The way I propose we approach the role of minerals within this socio-technical network sheds light on the interconnectedness between the production and consumption of technical objects and broader socio-environmental issues such as extractivist industries, climate crises, and national power dynamics. These components, derived from geological processes, often originate

[13] Drawing from John Law's research around AND (1992), it is important to mention how his work often focuses on how power dynamics emerge within networks and how they influence the formation and stabilization of actor-networks. He explores how different actors within a network negotiate power relations and how this affects the outcomes of various social processes.

from specific regions and nations, highlighting the geopolitical implications of their extraction and use.

- **The life of the technical object in the arts**

In conversations around the life of the technical object in the arts there tends to be a predominant focus on their abstract aspects, such as their algorithmic design, software functionalities, biases, and predetermined uses.[14] However, it is only recently, with the significant contributions of artists and researchers such as Josefina Buschmann (2022, 2024), Kate Crawford (2018, 2021, 2024), Vladan Joler (2018, 2023), and Eugenio Tisselli (2014, 2018, 2024), among others, that attention has been drawn to the often overlooked concrete aspect of technical objects. This aspect encompasses not only the materials used in their construction but also the labor involved in the extraction of its components as well as its manufacturing.

According to Simondon, if we were to understand the implications of the existence of the technical object, regardless of the socio-technical network it is part of, we would require an analysis of both their abstract and concrete aspects. This perspective becomes even more crucial within the transductive process, where grasping the socio-technical networks to which the technical object belongs requires a careful examination of the various actants involved.

Moreover, Puig de la Bellacasa's notion of matters of care provides the appropriate framework for understanding the multidirectional transductive process emphasizing the human responsibility in fostering a caring approach towards our interactions within these socio-technical

[14] Consider the influential contributions of curator and researcher Omar Kholeif, whose exhibition and subsequent book, *Electronic Superhighway: From Experiments in Art and Technology to Art After the Internet* (2016), shed light on the evolution of art in the digital age. Kholeif's most recent book, *Internet,_Art: From the Birth of the Web to the Rise of NFTs* (2023), continues to explore art with a specific focus on the role of the Internet. Similarly, Christiane Paul's seminal text *Digital Art (World of Art)* (2005) and Wolf Leiser's *The World of Digital Art* (2010) have been instrumental in shaping our understanding of digital art, while Lev Manovich's *The Language of New Media* (2001) offers profound insights into the language and aesthetics of the digital realm.While these art professionals have made invaluable contributions to the field of media art (including electronic art and digital art), their focus has primarily been on the aesthetic, cultural, and socio-political dimensions of this area, often overlooking its environmental implications and the sustainability of its tools and practices.

networks. This entails acknowledging our role in shaping these networks and our interactions with other non-human actants involved in the transductive process.

It is interesting to consider that the excessive and, many times, violent interactions between human and non-human actants have contributed to the climate crises we currently face and those that may arise in the future. Climate change can thus be viewed as a repercussion of an imbalanced and exploitative transductive process, where not only non-human actants have suffered in the process but also other human actants as well.

Given these pressing concerns, I advocate for a more comprehensive and empathetic examination of the lifecycle of technical objects and, for the field that concerns me in this essay, the art network they belong to. Such an approach could enable us to develop a deeper and more nuanced understanding of these objects and their potential implications, particularly in light of radical planetary changes, displacement, and societal collapse.[15]

To comprehend the lifecycle of a technical object, I propose considering several key factors. Firstly, I propose an analysis of its physical composition, which includes non-human components/actants such as minerals but also plastic, glass, clay, metal, and more. Secondly, we should explore its transductive interactions with human actants involved in the extraction and production of these components as well as with those who manufacture these technical objects. Thirdly, we need to examine its abstract condition, encompassing its design, intended uses, and predetermined capabilities, and the human decisions that influence these aspects. Finally, we should consider the varied uses assigned to it by its user(s), recognizing the diverse roles it plays in everyday life, as well as the second life of the technical object, this includes the misuses that

[15] Consider, for example, Robin Mearns and Andrew Norton's research on *The Social Dimensions of Climate Change: Equity and Vulnerability in a Warming World* (2009); the restless work of researchers María Amparo Martínez Arroyo, Carlos Nobre, Ana María Majano, and Walter Vergara to name a few.

its user(s) might give it and the socio-technical networks that its user(s) introduce it to (for example, the art circuit).

In this context I would like to emphasize the importance of considering the situated conditions at each stage of implementing this methodology for analyzing a technical object. Drawing on insights from María Puig de la Bellacasa, informed by the research of Donna Haraway and Sandra Harding on "situated knowledge," it is crucial to recognize the interconnectedness of human and non-human relations of care within specific contexts, temporalities, imaginaries, and sensibilities. For them, situated knowledge extends beyond the acknowledgment of social influences to recognize that our knowledge is inherently shaped by political and ethical considerations, influenced by our purposes and positionalities (Harding 1991).

Affirming the absurdity of attempting to disentangle human and non-human relations of care and the ethical complexities involved requires decentering human agencies and remaining attentive to the predicaments and inheritances of situated human actions. (Puig de la Bellacasa, 2017). Thus, understanding the life of a technical object necessitates acknowledging the conditions that shape its existence and the dynamics of migration that influence its abstract and concrete aspects. Not insignificantly, this migration is often performed through the works of artists who rework, reappropriate, and/or reinvent technical objects.

While similar methodologies are commonly employed in science, social studies, and even art history, where they have been applied to various objects using critical theory alongside a formal, biographical, and iconographical analyses, there remains a noticeable gap in scholarship concerning technical objects within art practice.

To address this gap, it is crucial to pay more attention to the transductive exchanges of technical objects and conduct a thorough analysis of their abstract and concrete conditions. This is particularly pertinent within the realm of critical analysis of contemporary art, given the prevalent use, creation, and deployment of technical objects within this field.

***HoloDecon*, a case study**

- Introducing Arcangelo Constantini and the chatarrerx artistic community

The Mexican media art scene is often characterized by its foundation in self-taught artistic practices, fostering interdisciplinarity within its core and propelled by the artistic community itself.[16] Despite some institutional support in the country, particularly during the early 2000s, these forms of artistic expression have largely been neglected in art history and criticism which has led to the collapse of many of these institutional spaces, programs, and funding opportunities.[17] My hypothesis suggests that this neglect stems from the elusive nature of the term "media arts," as pointed out by colleagues,[18] as well as a lack of understaining ot the situated nature of some of these artistic practices and their use of technical objects.

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[16] For example, see Erandy Vergara's *Electronic Traces: Archaeological Perspectives of Media Art in Mexico* (2016), Carlos R. Guzmán's Master's thesis on Mexican Technoscientific Arts (2000-2015), Fernando Monreal's book *Machines to Decompose the Gaze: Studies on the History of Electronic and Digital Arts in Mexico* (2020), and Cecilia Castañeda's research on tactical media presented in *Cuánto Tiempo Lleva Todo Esto Derramándose sin Desbordarse* (2021), a book I co-edited with Ricardo Domínguez.

[17] Significantly, initiatives such as the establishment of the Centro Multimedia at CENART, the curation efforts of Príamo Lozada and Karla Jasso at Laboratorio Arte Alameda, the Cyberlounge (2000-2009) directed by Arcangelo Constantini at Museo Tamayo, events like the international electronic arts festival Transitio_mx (2005-2018), and Rafael Lozano-Hemmer's exhibition at the Venice Biennale in 2007 have played key roles in shaping the Mexican media art scene.

[18] This is part of broader conversations around (new) media arts internationally and can be see through the work of curators Sarah Cook and Steve Dietz, particularly in their 2005 exhibition *The Art Formerly Known as New Media*, as well as in Cook's scholarship as seen in her essay *Murky Categorization and Bearing Witness: The Varied Processes of the Historicization of New Media Art.* Additionally, Christiane Paul's work on the topic, specially in *New Media in the White Cube and Beyond: Curatorial Models for Digital Art* a book she edited in 2008. Similarly, Beryl Graham has also produced various research on the topic in texts such as *A small collection of categories and keywords of new media art* and the 2014 book *New Collecting: Exhibiting and Audiences after New Media Art* edited by her.

One of the most unique cases I have found within this missing history is that of, what I have named, the chatarrerx artistic community. Although this essay's purpose is not to delve into the specifics around this community or the rationale behind their name, it is essential to note two key characteristics that are relevant to implementing the proposed methodology. Firstly, members of this community are predominantly self-taught artists who rework various technological tools, referred to here as technical objects. Secondly, they primarily utilize e-waste and discarded materials to produce their work.

In order to understand the role of the chatarrerx artistic community, of which Arcangelo Constantini is part of, it is important for readers to know that in the particular case of Mexico there is a culture of technological consumption deeply rooted in an ethos of repair and vernacular appropriation of what is at hand. We find this in socio-commercial establishments such as the Plaza de la Tecnología as well as in community-led makerspaces[19], and artistic practices that actively engage with the reworking of technical objects, increasingly in the 2000s in works designed to perform artistic agency in response to extractivism and the postcolonial condition.[20]

Shifting our focus to the artistic endeavors of Arcangelo Constantini, we encounter a self-taught artist and curator who works across diverse mediums such as visual and sound art, installations, performance, net art, and bio art. He holds a pivotal role within the chatarrerx artistic community, renowned for his insistence in challenging techno-utopian[21] discourses by

[19] A collaborative workspace that provides individuals with access to tools, equipment, and resources for creating, inventing, and tinkering. It's a community-oriented environment where people of all ages and skill levels can come together to explore their interests in various fields such as electronics, robotics, 3D printing, etc. I chose this terminology instead of "fablab" since Fablabs originated from the Massachusetts Institute of Technology (MIT) Center for Bits and Atoms (CBA) and adhere to specific principles outlined by the Fab Foundation.

[20] By postcolonial condition, I mean the socio-political, cultural, and economic circumstances that emerge in regions or nations following the end of colonial rule. It encompasses the complex legacy of colonialism, including the lingering effects of colonization on institutions, identities, power structures, and cultural norms. The term highlights the ongoing struggles and challenges faced by formerly colonized societies as they navigate issues such as identity formation, economic development, social justice, and political sovereignty in the aftermath of colonialism. (Bhabha, 1990, 2004; Fanon, 1967, 1968; Spivak, 1988, 1999)

[21] In this context I use "techno-utopian" in reference to a belief or ideology that technology, particularly advanced or emerging technologies, will inevitably lead to a utopian society or world characterized by prosperity, equality, and

refusing to adhere to conversations that pair up value with newness within the media arts. His incisive critiques of the contradictions inherent in technological progress, socio-political dynamics, and environmental challenges have made him one of the leading figures within this community.

- ***HoloDecon,* the abstract and the concrete technical objects**

HoloDecon (2009) is an artwork created by Arcangelo Constantini that combines elements of "obsolete" technology with references to early forms of virtual reality equipment. This artwork consists of two Samsung flip-phones from around 2000, along with two flashlights attached to a head-mounted surgical loupe reappropriated by the artist. It evokes the pioneering spirit of virtual reality gear such as Morton Heiling's *Telesphere Mask* from 1960 and the VR/AR head-mounted display *Sword of Damocles*, designed and developed by Ivan Sutherland and Bob Sproull in 1968.

The artwork has an interactive dimension where the visitors are invited to wear this device and "see" the world through it. Constantini employs head-mounted surgical loupes to magnify images displayed on the flip-phone's screen, capturing a low-resolution representation of the viewer's surroundings through the device's camera. These mediated images present an altered reality, reminiscent of a hologram, showcasing a live feedback of three-dimensional shapes in motion.

This artwork was originally presented at *¼ espacio emergente de arte y experimentación*, an independent artist-led space in Mexico City, and it featured an experimental sound composition created by Manrico Montero, Constantini's long-time collaborator. Subsequently, *HoloDecon* traveled south to be exhibited at the media arts festival *Arte.mov* (2010) in Belo

overall improvement in human conditions. Techno-utopians often view technology as a panacea for societal problems, believing that innovations such as artificial intelligence, automation, or digital connectivity will bring about a better future.

Horizonte, Brazil, and later resurfaced in 2016 at the exhibition *Afecto Material* curated by Jorge Ramírez as part of the International Symposium on Mixed and Augmented Reality (ISMAR).

Figure 1

Beyond delving into the foggy roads of intentionality, I will start by stating how this recombinant work amalgamates various technical objects into a singular entity, which must be perceived as the culmination of its constituent parts, and yet, requiring a careful examination of each component/actant. I will start the analysis of *HoloDecon* by exploring the concrete aspect of the technical objects that it encompasses and their relationship to the Mexican context.

- **The concrete technical object: Minerals and the Mexican context**

Since the implementation of NAFTA, Mexico has witnessed a surge in rhizomatic mineral extraction and exploitation, interestingly to fuel the demands of the tech industry among others.[22] Remarkably, Mexico holds the global mantle as the leading producer of silver, the sixth largest

[22] Primarily as a result of negotiations between the USA, Canada, and Mexico during the tenure of the North American Free Trade Agreement (NAFTA), which was in effect from 1994 to 2020, and the subsequent agreement known as the Mexico-United States-Canada Agreement (T-MEC) which is active until today.

producer of gold, and the tenth largest producer of copper.[23] While lithium is the mineral that sets off all the alarms about tech industry extraction, these Mexican minerals, largely ignored by the green movement, are key in the production of computers, smartphones, wearables, and more.[24]

Figure 2

Figure 3

Over the past decades, Mexico has witnessed a notable surge in activism and awareness surrounding issues of extraction, dispossession, and climate change. Indigenous communities have been at the forefront of resistance against extraction practices,[25] while climate change activists have condemned, among other things, the government's collaboration with large corporations.[26] Scholars have meticulously traced the colonial histories underpinning

[23] This information can be found on the official website of the Mexican Secretary of Economy, available at https://www.gob.mx/se/acciones-y-programas/mineria

[24] See, for example, Jussi Parikka's book *The Geology of Media* (2015) where he explores the materiality of media technologies by drawing analogies between geological processes and the production, circulation, and decay of media. He argues that media technologies are not just immaterial tools but are deeply embedded in material infrastructures and natural resources. Parikka emphasizes the importance of understanding the ecological implications of media production and consumption, highlighting how the extraction of minerals, energy consumption, and electronic waste contribute to environmental degradation.

[25] See for example the Zapatista Army of National Liberation's uprising against the NAFTA treaty in 1994.

[26] The structural reforms promoted by the Mexican government over time have made it easy for macro-corporations to exploit and extract wealth, without measuring the social costs and environmental impact that this entails. Patricia Ávila rightly points out that: "...the policies promoted by the State have been central in the advance of neoliberalism: the privatization of strategic resources such as water and land; environmental deregulation and the elimination of restrictions for foreign investment in extractive and productive activities highly consuming of natural resources (open-pit mining, commercial export agriculture, paper, oil and petrochemical industries, among others)..." (Avila, 2014, p.51)

displacement and violent accumulation in the country.[27] Artists, like Constantini, have also played a critical role in confronting the postcolonial condition, using various means to raise awareness and disseminate these urgent issues to broader audiences.

In the specific context of *HoloDecon*, it's crucial to recognize the significance of repurposing two Samsung flip-phones, especially given the timing of its creation. The artwork emerged during a pivotal period marked by the transition from cellphones, including flip-phones, to smartphones, notably following the introduction of the first iPhone in 2007. This era witnessed rapid technological advancements alongside the emergence of programmed obsolescence (DiMatteo and Wrbka, 2019) and restrictive strategies adopted by tech companies.[28]

By hacking two, now obsolete, flip-phones, Constantini gives them a second life that expands the usability of its components, many of which, as I have already underscored, are extracted from Mexican territory. However, it is also interesting to note that Samsung operates manufacturing facilities in several countries, including South Korea, Vietnam, China, India, and Brazil. This adds significance to *HoloDecon's* reappearance as an artwork in Brazil, potentially establishing a symbolic connection with the human actants who may have been involved in its manufacturing process.

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[27] See, for example, the books recent book edited by Ariadna Ramonetti, *Las islas también se desplazan: Diálogos sobre arte, política y territorio* (2024), where she invites various voices to contribute to the research on the intersection of art, politics, and territory. Additionally, her role as co-editor of the journal *Islario* (2016-2019) offers valuable insights into neocolonialism and extractivist practices in Mexico. Similarly, Adriana Salazar's research on water extraction is evident in her books *Lake Texcoco: Encyclopedia of Things Living and Dead* (2018) and *Water Spells* (2022).

[28] Samsung, among others like Apple, Google, and Sony, employs restrictive control measures over its devices, particularly concerning software modifications and customization. Their proprietary operating system, *One UI*, built on Android, often imposes limitations on users' ability to modify the software. This practice has created barriers for users seeking greater control and customization over their devices and has obscured the components that make up the companies devices.

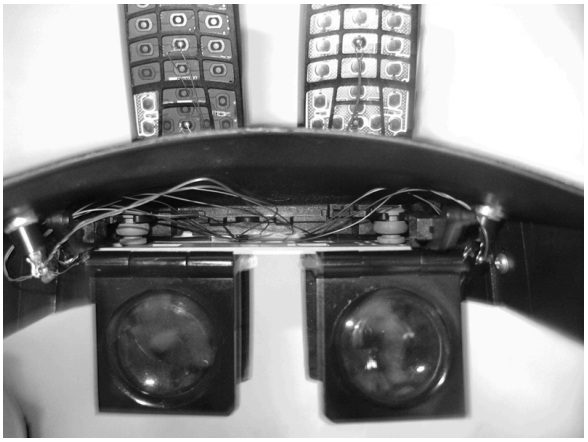

Figure 4

Figure 5

Constantini's insistence with utilizing e-waste and, notably, reintegrating obsolete technologies into his artistic endeavors reflects his engagement with an ethico-political practice. Beyond merely demonstrating resilience, this commitment embodies a practical application of his theoretical principles. *HoloDecon* exemplifies Constantini's ongoing recombinant practice, grounded in a spirit of technological disobedience.[29]

Additionally, *HoloDecon* integrates components from medical equipment, demonstrating a unique repurposing of these objects within the art circuit. By transitioning and reappropriating these tools, especially while using elements such as plastic straps and external wiring which are commonly single-use materials, the artist reveals a vernacular production that reclaims his agency as a “non-expert” on the creation of this new technical object.

HoloDecon’s concrete aspect acknowledges its non-human actants by tactically revealing and repurposing them, granting them a new existence within the art circuit and thereby elevating them into other categories of care. Through this process of reappropriation and reverse

[29] In this context, I draw upon Ernesto Oroza’s research (2009-2012) to define "technological disobedience" as a series of practices encompassing the empirical reuse, reappropriation, and reinvention of technological devices.

engineering of technical objects, Constantini integrates *HoloDecon* into a new transductive exchange, which encapsulates the lifecycle of the technical objects comprising the artwork. Simultaneously, this exchange disrupts these objects while incorporating new elements into the artistic dialogue.

- **The abstract technical object: disruption and contemplation**

Although I could argue that *HoloDecon* has a strong sculptural component of its own, the artist's approach to audience interaction is performative. Each visitor is invited to wear the device, activating its contents by viewing the surrounding space through it hence activating the piece.

Functioning as a proto-virtual reality headset, *HoloDecon* reflects some of the consequences of integrating technology into daily life, particularly those related to perception. Constantini's research for this piece introduces how the use of technology influences the contents of our dreams, among other forms of visuality. "Before cinema, dreams were linear; after cinema, they incorporate framing, camera angles, and movements". (Constantini, 2009)

Figure 6

Figure 7

Following the central components of *HoloDecon*, namely the Samsung flip-phones, it is interesting to pinpoint that Samsung is a South Korean multinational tech company. Since the

late 1960s, they have designed and developed various home electronics, TVs being one of their best-sellers, and in the early 1990s, they entered the mobile phone market.

According to Samsung's official website they follow a "a simple business philosophy: to devote its talent and technology to creating superior products and services that contribute to a better global society". (Samsung, 2024) It is not hard to deduce, given their core values and mission as well as the history of the technological devices they produce, that by "superior products and services" they mean that their idea of technological advancement is closely tied to modern ideas of progress. In this sense, the design and implementation of their technical objects, including the flip-phones reworked in *HoloDecon*, is imbued with the techno-optimist traits that emanates from its creators.

Interestingly, a big part of Samsung's efforts is dedicated towards advancements in display technology, producing high-resolution screens for various devices such as cellphones, smartphones, tablets, televisions, and computer monitors. Samsung's screens often feature innovations in resolution, color accuracy, brightness, and other display metrics, contributing to enhanced visual experiences for users across different platforms.[30]

In the case of *HoloDecon,* this emphasis on resolution and sharpness is challenged and redefined. The artwork disrupts this by incorporating a surgical loupe to magnify an intentionally foggy image displayed on the flip-phone screens. Through this intervention, Constantini effectively reverse-engineered both the flip-phones design and intended uses as well as the surgical loupe's original purpose.

[30] See Samsung's Annual Reports (2005, 2007, 2013, 2015, 2020, 2022)

Figure 8

Furthermore, in the second life of these technical objects presented in *HoloDecon*, Constantini challenges the essence of their functionalities, which traditionally promised highly sophisticated and neutral devices.[31]

Arcangelo, like many critics of modernity like Bruno Latour (1993, 2012), Donna Haraway (1985, 1991, 2006), and Sandra Harding (1986, 1991), challenges the idea of progress as a linear trajectory of improvement, particularly in the context of technological development and scientific advancement. He argues that the notion of progress often ignores the unintended consequences, uncertainties, and risks associated with innovation, leading to ecological, and epistemological crises.

[31] In their Five Samsung business principles, featured on the website, one principle states: "We do not intervene in politics and maintain neutrality". (2004)

Conclusions

We are living at a crucial moment in history where the intricate details of the technical objects permeating our lives can no longer be overlooked. As climate crises engulf entire regions and the consequences of late capitalism have taken a toll on all human and non-human actants within our shared socio-technical network, the urgency of our environmental and socio-political predicaments becomes increasingly important.

While the contemporary art scene has witnessed a surge in discussions surrounding interconnectedness and environmental consciousness, the relentless pace of technological innovation, mainly that related to Silicon Valley and the monopolies of tech industries, poses challenges in opting-out of the vicious cycles of extraction, precarization, and pollution that sustain them.

The aim of this essay is to make sense of the implications of the life of technical objects when repurposed within artistic practice by introducing a methodology rooted in care. This methodology serves as a starting point to analyze how some artistic practices, mainly those encompassed within the media arts universe but not limited to it, engage in discourse not only symbolically but also through reintegrating technical objects into new transductive exchanges, unpacking the fine details that are often overlooked by art historians.

By using Constantini's *HoloDecon* as a case study, I aimed to shed light on the practice of artists, including those within the chatarrerx community, who have pushed critical conversations around extractivism, tech industries, their situated relationships and environmental implications. Art, as a medium, has always held the potential to unveil the elusive forces of the conditions that surround it, whether they be socio-political contexts, climate crises, or

technological advancements. Thus, art historians should be able to apply a nuanced approach that successfully reflects these complexities.

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