ARTCHIAE:

For a Media Ar(t)chaeology of Telepresence

edited by
B. Grespi, M. De Rosa, M.T. Soldani, L. Lazzari

Milano University Press

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Cover image: *Hole in Space* (Kit Galloway and Sherrie Rabinowitz, 1980). Video still. Image copyright of the artist. Source: ResearchGate, image licensed CC BY-SA 4.0 Attribution-ShareAlike 4.0 International: https://www.researchgate.net/figure/Kit-Galloway-Sherrie-Rabinowitz-Hole-in-Space-1980-realtime-videoconference_fig1_377009554.

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Foreword*

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The *ARTCHAE* project stems from reflections on the pervasiveness of basic forms of telepresence that have become part of our lives since the beginning of the health emergency caused by the SARS-CoV-2 virus in March 2020. During this time, the necessity to carry out most personal and professional communications via video conferencing platforms has reinstated video's significance as a means of live image transmission through two-way (or multiple) streaming. This mode of telepresence forms part of a pivotal chapter in media history, in terms of both industrial experimentation with telephone and television technologies, and artistic practices. From a media archaeology perspective, this history has its roots in nineteenth century media imaginary and finds its full completion in contemporary forms of extended reality. From WhatsApp video calls to circuit-based media such as smartphone photography and desktop video interaction, or again, to live media forms such as virtual and augmented reality worlds and clubs, telepresence has become a central dimension of the contemporary mediascape.

The need to research the archaeology of this key aspect of our mediated present was first expressed in the article "Closed Circuit Faces. Archeologie del volto in telepresenza" by Anna Caterina Dalmasso and Barbara Grespi. In this essay—republished in English in this volume—the authors interpreted the self-transmission modes adopted by common platforms such as Meet, Teams,

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and Zoom as a radical remodeling of the CCTV mediation experimented with by early video artists such as famously Bruce Nauman, Dan Graham, Vito Acconci, and peter campus. On the other hand, the area of research devoted to artistic moving images has long inquired into the multifarious modes in which the issues of inhabiting space can be explored, manipulated, and represented in creative ways by means of so-called post-cinematic media configurations that provide interesting insights and technical solutions to think telepresence as we know it today. The project *ARTCHAE. Rediscovering Video and Installation Art as an Archaeology of Telepresence*, which was written in November 2022 and funded through the Prin 2022 PNRR call for proposals in Autumn 2023, initiates a broader and more detailed reflection on these strands. The project, developed by two research units—the leading unit at the University of Milan and the local unit at Ca' Foscari University Venice—primarily focuses on the role of art in conceiving telepresence as an open dimension with significant aesthetic and political potential, particularly with regard to the democratic sharing of experiences and the critical nature of self-mediation. Secondly, *ARTCHAE* has worked to expand the historical corpus of artworks focusing on CCTV. The team has traced a rich line of experimentation with telepresence developed by numerous female artists who are rarely mentioned in the history of video and media art. Recognizing the productivity of the technological model of circular recording-transmission system as a tool for reflection on specific themes of female identity, these artists explored discarded forms of telepresence that offered an alternative future to our current reality.

From this perspective, the *ARTCHAE* project has intended to advocate for a media archaeology of telepresence. To extend the corpus of artworks in an inclusive sense, the research team has partnered with important Italian and international archives gathering electronic and video art works, a selection of which is explored in some of the contributions collected in this volume. Our main partner has been MEET | Digital Culture Center in Milan, which is home to the *Le Radici del Nuovo* ["The Roots of the New"] archive. This contains a vast and varied collection of video documentation—assembled by Maria Grazia Mattei—relating to computer and telematic art from the 1960s to the present day. Our key collaborations in the Italian scene include the video art archives of Careof, Ondavideo, Invideo, explored on-site by the Milan unit, and a selection of Venice-based institutions such as Fondazione Bevilaqua La Masa and the Cardazzo Fund at Fondazione Giorgio Cini, where the Venice team has carried out on-site research. In-depth research was also conducted internationally at Electronic Art Intermix (New York), where the Milan team—composed of Barbara Grespi, Maria Teresa Soldani, and Rossana Galimi—has spent several months, and ARGOS—Centre for Audiovisual Art (Brussels), where the Venetian unit—composed of Miriam De Rosa, Lorenzo Lazzari, and Miriam Rejas Del Pino—has worked.

The *ARTCHAE* team also curated a series of scientific meetings with national and international scholars—the *ARTCHAE seminars* at Ca' Foscari University Venice; the conferences *ARTCHAE #1: Inside and Outside the Circuit* (keynote speakers: Matana Roberts, Wanda Strauven) and *ARTCHAE #2: Archaeologies of Telematic Presence* (keynote speakers: Lori Emerson, Kris Paulsen, Benjamin Piekut) at the University of Milan—plus a final event at MEET | Digital Culture Center with Maria Grazia Mattei, in which the *Le Radici del Nuovo* archive was opened to the public.

Thanks to these collaborations, the contributions collected in this volume are able to offer insights from Italian and international scholars alike that can provide readers with a theoretical and applied toolkit: on the one hand, the *ARTCHAE* research units have in effect interrogated the genealogies of contemporary telepresence by identifying key concepts and categories that may help in describing the mechanisms and technological opportunities opened by video and the tele-transmission of images. These are retrievable throughout a vast array of artistic works ranging from early videotapes up to CCTV-based installations, from multi-channel moving image works to TV clips. On the other hand, the project has focused on artistic practices as such, emphasizing the experimental element that allowed for a sort of "research-and-development" activity to unfold: analyzing the selected archives and artworks, it becomes quite apparent how artistic practice offers a lab space to test new technical solutions, expressive styles and aesthetic strategies.

In response to the complexity of the scenario, the volume is divided into three sections.[1] The first section ("Looking for Telepresence across Artistic Practice") addresses methodological issues, beginning with a material and technological analysis of experimental video practices as a site to start thinking and testing telepresence. It then conducts specific media archaeological explorations on the theme of telemediated corporeality in relation to spatiality and cultural belonging, offering insights into analogue and digital doubles and questioning the crucial archaeological role of the archive. The second section ("Telematic Art: Circuits for Space-Time Navigation") explores multimodal genealogies of tele transmission, focusing particularly on the role of sound and feminist video art. It investigates the attempted dismantling of broadcasting and concludes with an analysis of a limit case of contemporary tele-media art, in which the distance bridged by media is interplanetary. The third section ("Documents, Perspectives, and New Frontiers") brings together different forms of engagement with media art, combining first-hand accounts from figures active in the artistic and curatorial scene with already published essays that provide historical

1 The sections were conceived as distinct editorial units under the direction of their respective editors, who bear the full scientific and editorial responsibility for the content and iconographic materials included therein, as well as for their conformity to the established standards.

and theoretical framing, and concludes with the latest article by leading media archaeologist Wanda Strauven. Her article opens up new and fruitful avenues for media archaeology research, where video art intersects with reflections on screen genealogies.

By composing a catalogue of theoretical categories, artistic practices, and key testimonies, *ARTCHAE* highlights many points of continuity between the so-called "old" and "new" media. Moreover, it contributes to build strong cultural awareness and historical knowledge of the genealogical lineages of recent media formations, in the realm of the digital, not only offering ground for an informed consideration of our media practices, but also opening up avenues for future research that will hopefully tap into a sense of belonging and participation that we demonstrate to be historically fueled by both art practices and media.

The curators are grateful to the blind reviewers who contributed to this volume with insightful comments and suggestions. A special thanks goes to Jennifer Malvezzi for her generous and expert coordination of the blind review process. Finally, the curators are deeply grateful to Francesco Cassata for his scientific and editorial support and to FIONDA, Torino for the inspired design of the cover artwork.

I Section.
Looking for Telepresence across Artistic Practice

Introduction*

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When Marco Scotini presented the 2024 iteration of his ongoing project *Disobedience Archive* at the 60th Biennial of Art in Venice, he was probably not aware that his new zoetrope setup would have provided a paradigmatic artwork for the *ARTCHAE* project. Focused on the idea of retrieving antecedents of the contemporary applications of telepresence (Paulsen 2017, see also the author's contribution in section 2) into video and installation art, this research project seeks to explore archives gathering collections in the afore-mentioned art fields with the aim of sampling recurring tropes and symptomatic pieces or technologies, able to represent what Erkki Huhtamo (2013) would term *topoi*, but also what Jonathan Crary (1990) would describe as a fracture in the way of conceiving the technologies of the visual thus far adopted. Whilst some of the possible inquiry avenues sparked by this approach will be discussed in the contributions gathered in the second and third part of this book *ARTCHAE: For a Media Ar(t)chaeology of Telepresence*, section 1 sets the methodological premise of the overall project by explicitly embracing one of Wanda Strauven's suggestions regarding the key role of media artists (2007). In line with her lesson and in full media archaeological spirit, the texts that follow all move from the analysis of artistic practices, taking advantage of the freedom from strict methodological rules or disciplinary *caveat* exercised by video artists, filmmakers and experimenters more broadly, to build up possible readings of the genealogy at stake. From pioneering personalities employing video tape in their works in the Seventies, up to contemporary diasporic filmmaking experiences, from

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techno-pop groups up to cutting-edge curatorial projects crystallising the 2020s *zeitgeist*, the very different artistic experiences discussed in what follows all share the conviction that

> Not only does the artistic approach facilitate a multilayered excavation into time and space more easily than scholarly writing; generally speaking, the media artist also operates in direct, physical contact with the medium or, even better, with its materiality. Therefore, the media artist can dig into the technological past as well as in the potentialities of old and new media more straightforwardly than a (traditional) media historian. The media artist then becomes an example that the new media historian, or media archaeologist, might wish to follow, even if his/her academic toolbox and framework do not "allow" him/her to do so. (Strauven 2007, 73-74)

Far from simply providing case studies that move in the sky of art as monadic and disjointed stars connected to each other in a merely exemplificative fashion, the chapters gathered in this section offer each and every one a focus that works according to an associative thinking that is typical of the media archaeological approach. Echoing, to some extent, a Warburghian logic (the *Atlas Mnemosyne* was famously composed on dark cloth, where the different themed tables emerged from a combination and association of pictures are pinned in a temporary way, so that new positions and new connections may be produced continuously), this way of proceeding is well illustrated in Siegfried Zielinski's scholarly work (2019) and we believe fits for the purpose of this strand of the *ARTCHAE* project, too.

In this view, then, the *Disobedience Archive* provides with a brilliant opportunity to apply this approach, as regards to at least two aspects in particular. First, the use of the archive and its heterogeneous composition, as well as the idea of employing it in a malleable way so as to highlight its dynamic nature point to the multilayered and non-linear notion of history that characterises the media archaeological approach. Here, it takes shape thanks to the disposition in round across the gallery, where the various items preserved in the archive are in fact a series of videos from various authors and periods in time. Whilst a specific analysis of the pieces is offered in Miriam Rejas Del Pino's contribution, alongside a discussion of the genealogical element endowing Scotini's project, here is worth underlying the importance of these videos as the epitome of a "memory technology" (Blom 2016, 16)—a groundbreaking feature emerged in the 1970s when video starts to be used, which is well thematised here. This speaks of video's capacity to access memory in a non-linear manner, precisely as the *ARTCHAE* research team did as several different archives were explored over the course of the project. These include the *Fondazione Bevilacqua La Masa* archive, the *Cardazzo Fund* at *Giorgio Cini Foundation*, both in Venice; Michele

Sambin's private collection; the collection at *ARGOS – Centre for Audiovisual Art* (Brussels) and the *Electronic Art Intermix* archive in NYC.[1]

Going back to the *Disobedience Archive* as a paradigmatic artwork for the whole project, the second element which we deem significant to dwell upon is the specific setup designed for its Biennial iteration. As just quickly anticipated, this is reminiscent of a zoetrope: the eco to the optical toy shall be seen both literally in the disposition of the artwork and its components in space, as well as metaphorically. As far as the installation in the gallery space is concerned, the correspondence between the figurines pictured in series on a cylinder and the videos is quite apparent. The key feature of the zoetrope, that is, the cuts on the cylinder allowing for the images not to blur one into the other are replaced here by the dark wall separating each video. In the same way, the spinning movement of the cylinder which produced the illusion of motion between the figurines in the pre-cinema device, is turned into our own movement, as spectators, browsing across the exhibition space. The overall effect is that of a massive carousel that offers archival images edited in a different way, every time they are watched in a different order by a different spectator. That is the exact same rationale we adopt to compile this section of the present volume: readers are invited to spin the cylinder of an imaginary zoetrope and follow the movement before their eyes, except that the trajectory taking shape leaves them the agency to alter the motion deciding how to construct their visual journey. In effect this is not a conclusive journey, a given story, but rather one designed and re-designed at every reading, depending on the connections between the different chapters that we present here. Each stand as one of the figurines of the zoetrope—or one of the videos of the *Disobedience Archive*—and has a story to tell about how videoart provides with constitutive elements, motifs or techniques that shall be found still today in our telepresenced world. The non-linear temporal reconstruction and mode of watching the videos of Scotini's artwork opens up a set of possible interpretive paths across the plural genealogies of contemporary modes of telepresence.

Already in the 1970s, video artists were immediately drawn to experimenting with this then-new medium, engaging with all its components and protocols—from the two open-reels of the Video Taper Recorder to the feedback with the control monitor. The role that artists played in the experimentation with the video apparatus and its materiality is particularly explored in Lorenzo Lazzari's *At the Thresholds of the Medium: CCTV, Playback, and Feedback Breaking the Possibilities*

1 The authors would like to thank Stefano Coletto and Matilde Ferrarin at Fondazione Bevilacqua La Masa, Michele Sambin for allowing us to work on his personal archive, Fondazione Cini for granting the access to the Cardazzo Fund, the whole staff at ARGOS - Centre for Audiovisual Arts in Brussels and at Electronic Art Intermix in New York for facilitating the access and renting of artworks in their respective collections, which find a theoretical readings in the chapters gathered in this section.

of Video. Analysing three works created by Goran Trbuljak, Michele Sambin, and Dalibor Martinis in the late 1970s and now part of the *Cardazzo Fund*, Lazzari highlights how these artists were able to push the limits of the medium and its protocols in order to enhance the performative space activated around both the medium and the artists themselves.

In the examination of these works, another subject immediately emerges in the scene beyond the artist and the apparatus, namely, the double. Indeed, video—with its real-time quality—enhances the presence of the double (of the artist, the audience, and the medium itself), something that was not possible with film except through pre-recorded sequences. Perhaps as a consequence of what was first experimented with in the 1970s, the concept of doubling became predominant during the 1980s. This is evident in Francesco Spampinato's contribution. Entitled *Techno-Pop: Virtual Doubles and Dystopian Futures Around 1984*, this text navigates between postmodernism and cyberpunk culture to highlight how the notion of the virtual double served as a *fil rouge* in the artistic production of Giovanotti Mondani Meccanici and *Max Headroom*—both alter egos of artists' collectives—as well as in the animated mannequins of Rebecca Allen.

The presence of one's own double immediately comes from a longlasting expressive and technical research based on another visual artefact which, as Rosalind Krauss reminded us (1976), is closely related to video: the mirror. Rather than considering them as two entities that exist only in separation, it is important to examine the cases in which the video image and that on the mirror coexist within an art piece, thereby creating a short circuit in the viewer's perception of which image is reflected and which is in fact produced by video. That is particularly interesting when the impression of a multiplied subject relates to the context where this is located: distance and proximity, presence and absence are questioned and critically explored, while the artist wandering (or movements) across the frame becomes a way of wondering how to navigate it in between the on- and off-screen space. An analysis of these mechanisms is offered by Miriam De Rosa via selected video works by Joan Jonas and Lili Dujourie, in her chapter *Navigating the Frame: Videoart, Lines of Flight, Deixis.*

As these two artists demonstrate, the mirror is also always a frame, implying that something is invariably excluded from its inner surface. It also enables a series of movements through which objects and bodies may pass between the realms of existence and non-existence, memory and oblivion. This is a feature shared with the archive that allows thus to circle back thai reflection where opened it, by way of Lucy Reynolds' text, which closes the section. Looking at a specific artistic moving image work, her essay *Speculative Materializations in Erika Tan's Barang Barang: Spectral Entanglements* (2021) highlights how what is preserved within archives raises not only questions about the content of the documents themselves but, even more significantly, about the gaps that exist between them—about what has been excluded by a filter that pre-orders the

real (Ernst 2015, 13–15). Thematising the issue of absence, the author addresses the impossible presence of women from different epochs and geographies who, in Erika Tan's work are—with Vivian Sobchack (2011)—re-presenced. This is made possible through a speculative video fiction that inspires Reynolds' thinking about the intertwined stories of the characters, raising questions about what constitutes a colonial archive and what, precisely, lies within its gaps and ellipses.

In sum, this section of the book intends to reconstruct, mobilise and suggest possible connections between the moments in the history of media and in the videography of the artists we discuss crystallised in the various contributions collected herein. Moving along a dynamic trajectory running across a variety of media configurations ranging from installation art, video art, performance art (and re-enactment), the collected texts process the lessons of artists to offer different points of access into the rich and multilayered archaeology of contemporary telepresence.

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A Genealogical Approach to The Disobedience Archive*

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Abstract

This article examines the *Disobedience Archive*'s display, *The Zoetrope*, at the 60th International Art Exhibition, La Biennale di Venezia, investigating how this nomadic video archive challenges conventional understandings of history and memory. By analyzing the installation's unique spatial configuration, the paper demonstrates how its spiral form intertwines diverse times and subjectivities, thereby critiquing the idea of linear temporality. The article then employs Foucault's concept of genealogy to better understand how archival material is accessed and experienced, moving beyond a chronological progression of events. Conceived by curator Marco Scotini as an atlas of contemporary resistance tactics, the archive reconfigures itself in each setup, bringing forth voices and practices marginalized by normativity that now, more than ever, demand recognition.

Keywords: Zoetrope; Temporality; Atlas; Archive; Video

Abstract

Questo articolo analizza l'allestimento *The Zoetrope* del *Disobedience Archive* alla 60ª Esposizione Internazionale d'Arte, La Biennale di Venezia, per comprendere in che modo questo archivio video nomade metta in discussione le concezioni convenzionali di storia e di memoria. Attraverso l'analisi della configurazione spaziale dell'installazione, il saggio mostra come la sua forma a spirale intrecci tempi e soggettività differenti, criticando così l'idea di una temporalità lineare. L'articolo adotta il concetto foucaultiano di genealogia per comprendere in modo più approfondito come il materiale d'archivio venga fruito ed esperito, andando così oltre una semplice progressione cronologica degli eventi. Concepito dal curatore Marco Scotini come un atlante delle tattiche contemporanee di resistenza, le configurazioni dell'archivio fanno emergere voci e pratiche marginalizzate che, oggi più che mai, necessitano di riconoscimento.

Parole chiave: Zoetrope; Temporalità; Atlante; Archivio; Video

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1. Introduction

In a 2010 study, Aleida Assmann argued that both political and mnemonic aspects shape archives and that, accordingly, to control archives is to control memory (Assmann 2010). For a long time, dominant narratives depicted the archive as a place where facts can be found, or, in the words of Jeffrey Wallen, "a place where secrets are revealed or where one can now find truths that had been hidden and that actively shape and produce the identities of those it registers" (Wallen 2009, 267). These arguments arise from a significant theoretical engagement with the archival *dispositif*, underscored by foundational studies by Foucault and Derrida. Most of these studies highlight that the very construction of an archive is not neutral; instead, it can both elucidate and obscure dynamics of inclusion and exclusion of specific histories and subjectivities. Ernst van Alphen describes this process as a system in which "archives cover two types of knowledge: the knowledge that can be articulated and objectified by discursive rules, and the knowledge that remains overlooked because of the same discursive rules, now working as rules of exclusion" (van Alphen 2023, 10). The logics of exclusion discussed do not pertain exclusively to archival dynamics; instead, they are more broadly inherent in the very structure of historical discourse, which has traditionally conceptualized the archive according to a linear and philological temporal logic, arranging events sequentially. Generally speaking, archives, when confronted with how to classify nomadic or subaltern identities, are subjected to at least three tensions that are difficult to resolve: first, the inclusion or exclusion of certain "voices" in the archive; second, the loss of individuality of these "voices" once included; and, finally, the activity of archiving as a form of "pigeonholing" (van Alphen 2023).[1] In recent decades, many artistic collectives have been working with different kinds of archives, including personal archives and living archives such as griots, as well as with the embodied forms of knowledge they sustain. Thanks to such critical and artistic practices, the archive is now increasingly recognized as a device capable of articulating a critical perspective through its specific modes of display.

This article focuses specifically on this aspect—on the analysis of the archive's display, and specifically on its spatialization in terms of its "plastic and sensorial consistency" (Castellani 2022). Following Miriam De Rosa and Catherine Fowler, it adopts a topological perspective, that is, it examines the archive as it is displayed within a given space where "artworks […] turn the environment they enter into a place for viewing, within which the space surrounding the screen/s essentially becomes part of their fluctuating identity and form, making them navigable and practicable" (De Rosa and Fowler 2021, 514). This approach seeks to understand the role of display and of the moving image

1 The term *pigeonholing* defines a process that attempts to classify different entities into a limited number of categories, thereby flattening their complexity (see van Alphen 2023).

in bringing previously silenced subjectivities from home-made, personal, and subjective archives into a public exhibition context, thereby shaping *queer* exhibition spaces that move from the domestic to the public sphere. This case study provides a starting point for reflecting on the archive's temporal stratification, which can be "disentangled" with each new installation, particularly in the most recent display based on the zoetrope model. Drawing on the idea of an archaeology of telepresence, the article examines how the *Disobedience Archive* (*DA*) critiques linear arrangements and temporality by using the zoetrope as a paradigmatic media configuration that generates effects of presence and fundamentally transforms the ways in which the archive is experienced and received.

2. The Disobedience Archive

Launched in 2005, the *Disobedience Archive* (Fig. 1) is described on the project website as "an archive of video images conceived in multiple phases, mobile and evolving, which focuses on the relationship between artistic practices and political action. The project positions itself as an atlas of contemporary resistance tactics, from direct action to counter-information, from constituent practices to forms of bio-resistance. It functions as a 'manual for use' in social disobedience, including hundreds of documentary elements covering several decades" (Disobedience Archive website). The *DA* has taken different shapes over time: as a multifaceted device, it has featured over fifteen interventions realized in various countries, taking on different configurations with each edition, never assuming a definitive form and opening onto an idea of situated knowledge. For the *60th International Art Exhibition* in Venice, the curator conceived *The Zoetrope*, a dynamic set-up presenting two main sections, "Diaspora Activism" and "Gender Disobedience," which constitute the principal axes around which the film programme is organized.

Here, *The Zoetrope* display draws inspiration from the pre-cinematic device, chiefly by adopting its centrifugal spatial arrangement. The zoetrope, also known as the "wheel of life" and refined by William G. Horner in 1834, developed within the broader context of commercial optical devices, alongside instruments like Stampfer's stroboscope, already available in London by 1833 (Crary 1990; Herbert 2000; Sdegno 2003). It belongs to a period rich in optical experimentation that preceded the advent of the cinematograph. Earlier inventions such as the *thaumatrope* (1825), the *anorthoscope* (1828), and the *phenakistoscope* (1832) had already paved the way. Composed of a rotating cylinder with slits, the zoetrope housed sequences of drawings inside—dancers, jugglers, and other figures—allowing multiple spectators to view a single simulated action simultaneously (Crary 1990). The illusion of motion perceived through the apertures produces a stroboscopic effect, transforming static figures into continuous movement before the eye (Crary 1990). This is, perhaps, the most

significant element among those that the *Disobedience Archive* has incorporated for its zoetrope-inspired installation: namely, the simultaneity of vision for a group of spectators who, each positioned before a screen, find themselves inserted into a "machine" that opens up multiple subjective paths which can change from visit to visit (Campagnoni 1997, 2007). The various panels, suspended within the very long spaces of the *Corderie dell'Arsenale*, emerge midway along the entire exhibition path as a device with both centripetal and centrifugal force. This compels the viewer to enter its spiral, or, if they choose not to follow its trajectory, to quickly traverse it by zigzagging. This article argues that it is precisely the topology of the spiral, and the forces, positions, and paths that it entangles, that function as a dynamic tool allowing users to deconstruct the established narratives.

Figure 1. *Disobedience Archive (The Zoetrope)*, 60th International Art Exhibition – *La Biennale di Venezia*, *Stranieri Ovunque – Foreigners Everywhere*. Photo by Marco Zorzanello. Courtesy of La Biennale di Venezia.

3. The Spiral Shape

How does the exhibition format shape the meaning of the works, and what is the specific contribution of the medium? We argue that the zoetrope-inspired spiral enables the archive to unfold along multiple, interrelated pathways, producing a simultaneous and navigable experience. To develop this claim, we examine the display from two entwined perspectives—external and internal—mapping their spatial and temporal implications.

From the outside, it is important to note that, unlike various Virtual and Augmented Reality devices which provide total immersion to the point where observers may lose the ability to distinguish between reality and fiction, the spiral structure offers the spectator only partial control. While able to decide their direction, the viewer nonetheless remains absorbed by the set-up. If a sense of immersion is maintained in this display—despite it not being a 360-degree screen—it is closer to Mihály Csíkszentmihályi's definition of "flow": a state in which the observer becomes so deeply involved that everything else recedes in importance. This idea of immersion is closely linked to the concept of telepresence, understood as the way technologies emulate reality, making the user feel as if they are directly interacting with a simulated environment that is, in truth, distant—in a "there and then" different from the spectator's own. For the experience of immersion, and thus a feeling of telepresence, to be complete, the perception of the medium supporting the representation must vanish, becoming, in Louis Marin's terms, *transparent* (Marin 2012).

In the case of the original zoetrope, a stroboscopic effect is achieved through the intermittent viewing of figures perceived in periodic motion. During rotation, the drum's external surface (usually painted black) does not appear to the observer, who enters directly into the content (Crary 1990). Spatially, the videos are arranged like sequential figures on a cylindrical band and the zoetrope's viewing apertures are reconfigured as dark partitions between screens. In this sense, the zoetrope, in its original form, produces a strong sense of telepresence: as the slits of the dispositif disappear, they "connect" images and viewer, who actively participates in the experience of the image. While a traditional zoetrope produces an effect of presence primarily through an optical mechanism that allows the eye to reach the content through apertures—spinning in a totalizing and all-encompassing way—the Disobedience Archive's Zoetrope produces an effect of embodied presence. This is generated through the displacement of the observer, who literally enters the filmic generative machine and inhabits it, shifting the point of view from the outside to the inside and vice versa. In doing so, there is no longer a central element that turns with a centripetal force. Instead, the body of the observer becomes its centre, and their movements become the only force that guides the displayed narratives.

In the *DA*'s version, the historical zoetrope is remediated in form and scaled up so that the observer looks into the machine from within, where the original

drawings would have been. If the dispositif becomes large enough to *absorb* not only the gaze but to *contain* the observer, the drawings are replaced by screens. The environment thus incorporates both the video works and the observer, whose bodily experience—moving within a topology designed to grant freedom within a defined framework—structures the encounter. Even without physical apertures, the DA's moving-image ensemble functions as a whole: the "memory" of the original zoetrope—"a visual echo of technology's oneiric life" (Beloff 2005)—invites viewers to perceive the entire group of films as a single, continuous present. As Anna Caterina Dalmasso notes (2019), drawing from Sergej Ejzenštejn,[2] the interplay of two dynamics—emergence and immersion—characterizes immersivity, or the idea of presence: on one hand, the real spills into the virtual, and on the other, the virtual (the fictional) incorporates the real. *The Zoetrope*, thus, with its cyclical motion that brings static figures to life, can be described as a primitive device for *tele-representation* or *telepresence* of forms. The *Disobedience Archive*'s installation at the Biennale, by reactivating and reinterpreting this mechanism in archaeological terms, powerfully re-examines the issues of *presence/absence* and bodily mediation—themes that remain central to understanding telepresence in a contemporary context, thus reaffirming what has already been naturalized as a post-medium condition (Eugeni 2015). The circular device, even if not in spinning, allows for a coexistence and joint viewing of the works respecting the mission of the DA described as a dispositif that "reorganizes geographies, subjectivities, and political trajectories" (*Disobedience Archive* website) that is reinforced by the multiplication of viewpoints, which generate a sense of "choral presence" and "tele-participation" in the narratives being represented. *The Zoetrope's* display, with its concentric circular structure, does not merely represent the concept of a frontier but transforms it into a physical experience. Working with the semantic idea of a border acquires profound significance precisely because the installation compels the spectator to physically overcome these barriers by moving from one concentric circle to another. This movement can evoke, with due ethical distance, a displacement currently undertaken by those who inhabit the narratives of the films presented. For example, the struggles depicted in Khaled Jarrar's *Notes on Displacement* (2022), the journeys in Oliver Ressler and Zanny Begg's *Right of Passage* (2013), and the frontiers explored in Maria Kourkouta and Niki Giannari's *Spectres Are Haunting Europe* (2016) are rendered tangible through the very act of traversing and navigating the exhibition. It is now clear how the spiral shape can create contamination between the spaces and the images, in both topological and spatial terms. However, is the topological dimension intrinsically entangled with a temporal critique?

2 Ejzenštejn (1949) describes the stereoscopic event as an alternation between depth and relief, illustrating the medium's capacity to connect the real and the filmic dimensions.

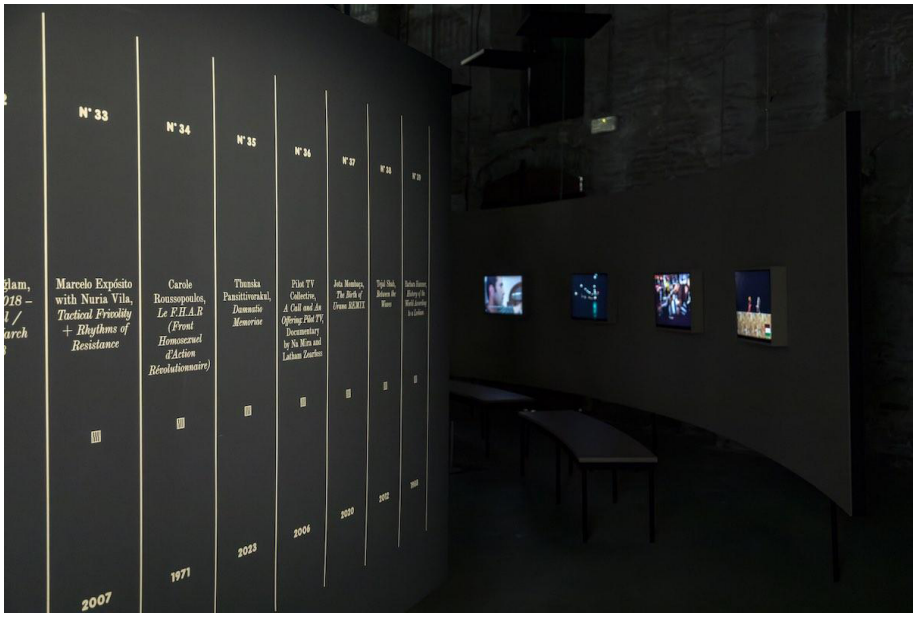

Figure 2. *Disobedience Archive (The Zoetrope)*, 60th International Art Exhibition – *La Biennale di Venezia*, *Stranieri Ovunque – Foreigners Everywhere*. Photo by Marco Zorzanello. Courtesy of La Biennale di Venezia.

4. Rethinking Time

To better understand the critique of time inherent in the *Disobedience Archive*, it is useful to step back and examine the concept of genealogy, particularly Michel Foucault's understanding of *Entstehung*. One of the central problems for theorists and practitioners engaging with this question is how to "profane" history from within the same dispositif that has allowed these histories to emerge (Castellani 2022; Scotini 2022). It is undoubtedly through the display and the montage created by curatorial choices that a new meaning emerges, allowing the material to become readable due to new connections. This also allows the observer to take their own path and produce their montage, as noted above. This article advances "critical genealogy" as an operative concept: an approach that departs from the idea of a single origin and helps us better understand how to create counter-histories.

From this perspective, the *DA* can be read as a genealogical laboratory in which the materials do not document a coherent historical progression but rather expose the fractures, returns, and re-emergences that structure the present. The spiral arrangement of the work does not simply juxtapose films produced in different years or contexts; it also stages the coexistence of heterogeneous

temporalities that collide in the viewer's embodied experience. What appears as simultaneity in the installation—multiple screens active at once—corresponds, at the historical level, to a complex layering of struggles that are neither reducible to a common origin. The curator, Marco Scotini, points out how "the word 'archive,' much like 'archaeology,' truly resonates with the Greek root 'archè,' which, according to Derrida, stands for command (*archon*) and origin. However, as the two fathers of modern philology and archaeology have stated, it is now about thinking of something where the origin is not the pristine and coherent unity of a phenomenon, but always the dispersion and hybridization of multiple events" (Scotini 2022, 33).

The apparent historical linearity of Western thought, which permeated history up to the 1960s, generated idealized continuities in reality that make it difficult for images to open onto new investments of meaning extending beyond historiographical interpretations. Foucault, following in the footsteps of Nietzsche's critique of historicism in his historical revision, traces an epistemological path in which he moves beyond his initial proposition, the "archaeology of knowledge"—whose inquiry is, moreover, dedicated to the archive as a system determining the formation of subjectivities—to initiate that of "critical genealogy" (1977, 194). One of the reasons Foucault "replaces" the archaeological method with the genealogical one is to highlight the influence of power dynamics on knowledge, and of the forms of domination connected to the use of apparatuses[3]. The philosopher, in these inquiries, dedicates himself to the study of history's "accidents" and "deviations" in order "to agitate what was perceived as immobile, to fragment what was believed to be united, to show its heterogeneity" ([1971] 2004, 29). Before addressing the search for origin—at least in a Nietzschean sense—Foucault questions whether such an endeavor is even possible (Cati 2013), since, in his view, the term "origin" can have multiple meanings. Foucault specifies three different meanings of the term "origin" understood as birth: the origin (*Ursprung*), the provenance (*Herkunft*), and the emergence (*Entstehung*). Ursprung refers to the exact essence of the thing, that is, to the place of truth understood as a kind of original foundation "even outside time itself" (Cati 2013, 156), which could be seen as the "positivist" and traditional way of understanding archives.[4]

3 The concept of the *dispositif*, which Foucault also called the *appfactors of blood tie the individualaratus*, holds a specific significance. It designates a complex set of discourses and institutions: "architectural forms, regulatory decisions, laws, administrative measures, scientific statements, philosophical, moral and philanthropic propositions – in short, the said as much as the unsaid. Such are the elements of the apparatus. The apparatus itself is the system of relations that can be established between these elements" (Foucault [1977] 1980, 194).

4 "Origin (*Ursprung*), though a thoroughly historical category, has nothing in common with genesis (*Entstehung*). By origin we do not mean a becoming of what is already born, but rather something that emerges from becoming and passing away. The origin stands in the river

Genealogical knowledge does not aim to establish what is "true," but rather how those truths are produced within discourses. This means that the search for Ursprung—for the proper and ideal origin—is far from the genealogist's intentions. Foucault uses the other two meanings to confirm his position regarding the "excavation of the past." The philosopher argues, instead, that origin should be understood as "provenance" or "emergence" (and not in the traditional sense of "influence"), thereby demonstrating that every beginning can be grasped only from the present as a syncope. As Alice Cati (2013, 157) notes, "the *Herkunft* alludes to the idea of provenance as lineage, belonging to a group to which the individual is tied by factors of blood […]; genealogy conceived as an analysis of provenance must refrain from investigating fundamental anthropological phenomena, such as criteria of resemblance between individuals, in order instead to turn to the heterogeneous layers that render any inheritance precarious." Foucault then focuses on *Entstehung* as re-emergence—the return of an event that reappears symptomatically: "a singular appearance through which a given situation can be understood from the perspective of the entry onto the scene, the irruption of certain ungovernable forces that collide with one another […]. Emergence always occurs within a certain state of forces, thereby designating the site of a confrontation, a struggle that cyclically reproduces the conflict between dominants and dominated" (Cati 2013, 158).

Finally, *Entstehung* replaces the idea of a unified temporal synthesis with that of a stratified horizon in which it is possible to understand the discontinuous processes through which the past becomes present. Genealogy problematizes the present by revealing the power relations upon which it depends, since its objective is to trace the displacements and construction processes from which contemporary practices emerge, but also to show the historical conditions upon which these practices depend. The time required by the genealogical method must therefore be extended, because "the forms of knowledge required by our present necessitate a careful dedication to understanding deep time, medial, symbolic, linguistic, and material archaeologies, as well as to non-dominant epistemologies that resist the excess of light in our present, moving between what is illuminated and what is opaque" (Soto Calderón 2023, 17). In archives, these never-realized "lines of action" can emerge through display and become connected differently—not according to chronological or thematic relations, but rather those dictated by the physical movement of the observer. In light of what has been discussed, the archive itself should not be conceived merely as a warehouse of materials but as an *ensemble* that can be exhibited and experienced. The concept of *Entstehung* enables us to identify what emerges within discontinuity, allowing practitioners to move beyond the philological historicism that

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of becoming like a whirlpool (*Strudel*), drawing the material of birth into its own rhythm" (Benjamin [1926] 1971, 24).

traditionally shapes archives and their display methods. In this sense, the curatorial team participating in the exhibition project is central to bringing previously overlooked materials to the forefront, and they should collaborate actively with archivists in order to create new forms of coexistence across different medialities, even though the observers remain the pivotal center of the montage's construction.

5. Conclusion

In short, the archive, as a dispositif, can be seen not merely as a structure for preserving memory but also as one that questions both its linearity and its construction. If the archive is to move beyond grand modernist narratives, considering time in its plastic and concrete dimensions proves to be a heuristic operation that opens new avenues for meaning. The archive "is a collection of heterogeneous materials not immediately channeled into a construct finalized for something or into a story that claims to signify totality in a single account" (Scotini 2022). In this sense, the media setups through which it is shown play a central role in defining not only its reception but also its modes of signification. The methods chosen by the curator and his collaborators to challenge linear time prove to be a generative and fertile approach, producing new ways of viewing films that were previously difficult to access. The two sections selected for *The Zoetrope* already signal a refusal of homogeneous political subjectivities, favoring instead intersectional positions that cut across national, ethnic, and gendered boundaries. The archive becomes, in this sense, a field of forces rather than a neutral repository: by re-editing and re-siting the materials in relation to different struggles, the DA exposes how images participate in constructing and contesting hegemonic narratives. Its nomadism thus does not merely refer to the physical displacement of the exhibition from one institution to another; it also indicates an epistemic mobility, whereby the criteria of classification, grouping, and comparison are constantly renegotiated in response to new contexts and alliances. This "archive exhibition"—a format that clearly deserves further theoretical investigation—offers a model for actively performing the archive. It serves as a framework where media and the processes of remediation of ancient media play a central role in shaping subjective experience, and contribute to ordering the film content into new forms of narration. What activates the archive is the observer, endowed with agency, who performs a subjective act by moving through the spaces of *The Zoetrope* and becomes an archivist capable of building counter-histories. Ultimately, De Rosa and Fowler's (2019) concept of "topological thinking"—developed from Rey Chow's (2012) reflections—offers a way to conceive the space within the work as a site of "entanglements" in both physical and semantic terms.

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At the Thresholds of the Medium: CCTV, Playback, and Feedback Breaking the Possibilities of Video*

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Abstract

By examining the video closed-circuit system, feedback, and the materiality of magnetic tape, this essay explores the influence these operational protocols had on experimentation with the video medium in the late 1970s. Originally conceived as a mere recording device for television images, the medium is subjected to performative actions that turn its limitations into strengths, revealing its unexpressed potential—as seen in the works of Goran Trbuljak (*Untitled [Cut]*), Michele Sambin (*VTR & I*), and Dalibor Martinis (*Open Reel*). All these videos include performative actions that are activated by the use of the ½-inch open-reel system, just before its complete disappearance in favor to the ¾-inch cassette system. The actions of the artists with the tape become integral to the work itself and, in combination with CCTV, feedback, and a particular use of magnetic tape, allow for a transgression of the purposes for which the medium was originally designed. What emerges relevant is a use of videotape that finds its artistic significance not in the space of the apparatus, but in that of the performance.

Keywords: Video Art; Feedback; Performance; Open Reel

Abstract

Esaminando il sistema video a circuito chiuso, il feedback e la materialità del nastro magnetico, questo saggio esplora l'influenza che questi protocolli operativi hanno avuto sulla sperimentazione con il medium video alla fine degli anni Settanta. Originariamente concepito come un semplice dispositivo di registrazione per immagini televisive, il medium è sottoposto ad azioni performative che ne trasformano i limiti in punti di forza, rivelandone il potenziale inespresso, come si vede nelle opere di Goran Trbuljak

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(Untitled [Cut]), Michele Sambin (VTR & I) e Dalibor Martinis (Open Reel). Tutti questi video includono azioni performative attivate dall'uso del sistema a bobina aperta da ½ pollice, poco prima della sua completa scomparsa a favore del sistema a cassetta da ¾ di pollice. Le azioni degli artisti con il nastro diventano parte integrante dell'opera stessa e, in combinazione con telecamere a circuito chiuso, feedback e un particolare utilizzo del nastro magnetico, consentono una trasgressione degli scopi per cui il medium era stato originariamente progettato. Ciò che emerge rilevante è un uso del videotape che trova il suo significato artistico non nello spazio dell'apparato, ma in quello della performance.

Parole chiave: Videoarte; Feedback; Performance; Open Reel

1. Introduction

The aim of this essay is to examine the extent to which the operative protocols of closed-circuit television (CCTV), monitor feedback, and usage of the magnetic tape profoundly influenced the production of certain artists' video works at the end of the 1970s. It is argued, in particular, that these two protocols and the materiality of video shaped the works so fundamentally that they pushed the medium to the limits of its technical and conceptual possibilities, revealing uses not originally anticipated in the design and operation of the electromagnetic moving image apparatus. In short, the essay explores a use of the medium at its thresholds, meaning that the action of artists with video moves on uncertain ground between the conventional application of videotape functioning and experimental uses through the manipulation of the tape itself.

The works examined are *Open Reel* (1976) by Dalibor Martinis, *Untitled [Cut]* (1976) by Goran Trbuljak, and *VTR & I* (1978) by Michele Sambin. All of these works were produced within the context of the Galleria del Cavallino. Founded in Venice in 1942 by Paolo and Gabriella Cardazzo, the gallery ceased operations in 2003 (Parolo 2017, 155; Parolo 2019b, 23), and its archive is now deposited at the Fondazione Giorgio Cini in Venice. Between 1974 and 1978, the gallery also functioned as a centre for the production of artists' video works, adopting an international perspective (Parolo 2017, 219; Parolo 2019b, 95–134), as well as an intermodal research on video, as it experimented with an installative character through music, painting, photography and performance (Saba 2022, 133).

The criteria for which these works have been chosen is that they are positioned at the thresholds of a technological change—at the end of a story. In fact, while the videos mentioned were produced in the second half of the decade, the ½-inch open-reel technology was employed. Considering the timing, this is curious, as it appears to lie at the margins of the technological standard then being established.

To elucidate this point, it should be noted that already in 1971 Sony introduced the U-matic ¾-inch cassette system, which was able to offer higher-quality

images than the open-reel, as well as a more reliable editing. However, it was more costly and thus used primarily in semi-professional environments (Bordina 2013, 225). But very soon, in the second half of the decade, it became the most used in art exhibition spaces and centers of production, because it was the most easily accessible format in terms of distribution, storage (Parolo 2017, 98) and exhibition displaying (Parolo 2019b, 136).

Moreover, the major revolution made possible within the U-matic system at the end of the decade and in the early 1980s was the emergence of post-production technologies that became accessible on the (professional) market—with differences in accessibility depending on the country—allowing artists to make precise cuts, mix images, and add effects. This directly affected the approach of artists, who began to focus more on the possibilities of the editing phase of video rather than on the peculiar real-time quality that had characterized the art experimentation with the ½-inch open-reel format (Leuzzi and Partridge 2016, 260, 296; Meigh-Andrews 2014, 189).

For these reasons, the use of the open-reel format by Martinis, Trbuljak, and Sambin, between 1976 and 1978 is quite unusual, as it appears to be a forced use of an already obsolete medium. If not motivated by economic constraints or the limited availability of U-matic technologies at the Galleria del Cavallino, their choice must have been made in accordance with a particular conceptual experimentation they intended to pursue with video—an approach for which the ¾-inch system was not a viable option, as it would not have achieved the desired result (Parolo 2019a, 187).

Certainly, there is a desire to make apparent the real-time quality fostered by the open-reel format. However, this could not be the only reason, as real-time images are also achievable with a ¾-inch cassette, even if its system encourages users to focus on the post-production phase, as discussed earlier. As will become evident later in the analysis of the works, it is the direct manipulation of the materiality of video technology—that is, the possibility of interacting physically with the magnetic tape—that led the artists to make this choice, transforming the obsolescence of ½-inch tape from a limitation into a virtue and a form of resistance against the rapidly changing nature of video formats in the market (Elsaesser 2018, 153).

Before turning to a detailed analysis of each work, it is necessary to consider what video technology is and for what purposes it was originally invented and distributed, both in professional and consumer markets. Subsequently, the functioning of CCTV must be outlined, with particular emphasis on the concept of feedback, in order to clarify the differing ways in which it is understood and applied across various contexts Observing those protocols is fundamental not only to conceptually understanding the works of Martinis, Trbuljak, and Sambin, but also to understanding how they were practically developed.

2. Video and Playback

Analogue video is an electromagnetic technology that emerged in the early 1950s to preserve the ephemeral images produced by television (Blom 2016, 12). The cathode ray tube (CRT), in which television images were visualized, had no capacity to record the sequences of electron beams striking its surface. Prior to the advent of video, the only means of preserving television content was by filming the screen with a film camera, like the *kinescope* ("TV Recording System" 1953, 227) system—a costly process that did not capture the television signal directly, but rather its representation as it appeared on the screen.

With the advent of video, by contrast, the image—encoded as an electrical signal—could be directly recorded onto magnetic tape in the form of magnetized track patterns. A split second later, these signals could be "read" by a machine capable of converting them back into an electrical signal and transmitting them to a CRT monitor, thereby rendering the image visible once again. This constituted the principal innovative feature of video: the possibility of instant playback—that is, the ability to view recorded images just moments after their capture, thereby bypassing the lengthy development processes required for cinematographic film in laboratories (D'Amico 1971, 35).

The other main difference between film and video is that on the former the images are indelibly impressed on the celluloid strip, while on magnetic tape they are "erasable" and "rewritable". In fact, as known, once the light hits a portion of a film there is no going back and the image is latently there: it is possible to reveal it with the development phase, or it can be exposed again, layering it with more light—but it is not possible to go back to a situation of unexposed emulsion. On the other hand, with video, images are not "impressed" on the tape surface: they are inscribed in magnetized particles that can indefinitely change their positive or negative state until the deterioration of the support itself. Because of this, images can be deleted and recorded again on the same portion of tape (Bonet et al. 2010, 15–17).

According to what has just been highlighted, it is evident that there is a potential for economic savings in the phase of video production, compared to film. In fact, if something is recorded incorrectly, it is not necessary to keep it and use a new part of the tape to record it again, like happens with film; rather, the mistake can be deleted and recorded over on the same piece of tape, thereby avoiding material costs. But, more than this, there is a question of time and space in the production of a video work.

Through playback, both time and space acquire a peculiar "dilatation." This is because the image just recorded can be seen again wherever there is electricity and a cable connection or airwave communication, a split second later, a few seconds later, or at a specific time set in advance—but the viewing does not have to wait for a mandatory development period, as in film. Where and when to look at the recorded images is thus at the complete discretion of who made them.

3. Video and CCTV

CCTV is an operative protocol in which the output signal of one or more video cameras is directly connected to one or more control monitors, displaying the images in real time. It originated in military and industrial contexts and evolved across diverse domains, including surveillance, security, media, and entertainment (Deane 2015), always with the idea of interacting visually with an object or environment at a distance, without being present. CCTV can also be achieved with or without videotape technology, as the recording of those images is optional and can be omitted if not needed (Blom 2016, 25). At the same time, the opposite is not so true, as the use of CCTV in video practices is quite fundamental.

In fact, it is possible to view the live images produced by a video camera not only through the viewfinder, but also by connecting a monitor via CCTV. This offers enormous advantages. First of all, the image can be blown up allowing for more detailed control of visual elements. Secondly, the monitor screen can be rotated 180°, facing not the operator but the same object, environment, or person that the video camera is capturing. This means that, for example, a performer can see herself or himself while performing in front of the camera, adjusting and modifying the performance in response to the image coming from the camera (Blom 2016, 36–38).

On the one hand, this is of course related, again, to surveillance: surveilling the self while performing, checking the correctness of posture, acting, etc.; playing with the image of the self, interacting visually with it. But there is another possibility: playing with the space framed by the image, as it is precisely knowable in real time on the monitor in CCTV mode. The movement of the artist can then be not just preemptively planned, but can also respond to the portion of space—whether small or large—that is visible on the control monitor, a key theme in the exploration of the self, as addressed in Miriam De Rosa's essay in this volume.

The possibility of monitoring the image of the self is today taken for granted, as it is embedded in every telepresence webcam application. In these settings, the user simultaneously views both the interlocutor and their own image, dividing their attention to monitor their posture, if not the environment visible within the frame of the video call. The very fact that this is taken for granted represents a form of "tacit cinematic knowledge," (Boguska et al. 2024, 12) whereby the operational modes of video and its artistic practices have been assimilated into domains such as work and in its gestures (13–14).

At the same time, this possibility of audiovisual self-response derives from a mechanism that is pre-cinematic, one which artistic video practices have, in turn, incorporated: feedback.

4. Video and Feedback

The above-mentioned qualities facilitate an immediate review of events captured by the video camera and, when necessary, adjustments based on observations—that is, a response to what is immediately seen. In cybernetics, this recursive process involving action, observation, and response is known as feedback, a self-regulating mechanism operative in both machines and living organisms. Feedback enables the correction of a process while it is ongoing by gathering information from both the environment and the process itself, simultaneously converting this information into input that influences the further development of the process (Mey 2023, 37). For example, in the human body, the ability to hold vertical equilibrium relies on a series of automatic and unconscious adjustments that enable us to counteract gravity, sustain posture, and prevent falling during movement or action.

What does this concept of feedback have to do with video? It is possible to approach this relationship from two fronts—respectively, inside and outside the circuit, a distinction that I propose to clarify the different uses of video feedback. First, speaking of feedback that occurs *inside* the circuit means to consider the feedback generated within the video apparatus itself. In brief, what the video camera is capturing is its own output image, which becomes a new input, enhancing the "metamorphic nature" (Lischi 2020, 22) of the video image. To achieve this, CCTV must be configured in such a way that the camera lens is directed toward the control monitor displaying the video output. This *mise en abyme* generates a kind of image collapse, resulting in mesmerizing effects—well known in early video art works by, for example, Wojciech Bruszewski, Nam June Paik, Stephen Partridge, Skip Sweeney, Woody and Steina Vasulka, among others (Bonet et al. 2010, 116–26; Meigh-Andrews 2014, 173–83).

The responses the artist has to the image visible on the monitor are directed toward the continued manipulation of the *mise en abyme* effect, resulting in a constant flow of variation. This process feeds the CCTV system indefinitely, like a gargantuan machine with an insatiable hunger for abstract images—images that are themselves the product of its own digestion. In this case, since the feedback responses occur inside the circuit, there are not necessarily any variations or interactions with the environment in which the video apparatus is situated, as the feedback operates autonomously, recursively producing and consuming images.

A different matter is feedback *outside* the circuit. This means there is no need for the video camera to be pointed directly at the control monitor, as the self-regulated actions are occurring in the environment outside the circuit. It means that the person operating the video camera is indeed checking the output on the control monitor, but in order to modify the way the interaction between the video camera and the environment takes place. These interactions

may include those involving the performer, if there is one in front of the camera—who, depending on the spatial placement of the control monitor, could also be the operator.

The result of the performance is thus influenced by its own representation displayed on the control monitor, while the video image is, in turn, influenced by the actions of the performer—in a never-ending cross-reference. This dynamic is well known to artists who have combined video and performance as one of their main means of artistic expression, such as Vito Acconci, Douglas Davis, Dan Graham, Kit Galloway and Sherrie Rabinowitz, Sanja Iveković, Joan Jonas, Les Levine, and others (Levine 2017, 32–33; Marcoci 2011, 51–54; Paulsen 2017, chap. 2, chap. 4).

Now that the characteristics of playback, CCTV, and feedback in relation to video have been highlighted, the argument can proceed with the analysis of the three works by Martinis, Trbuljak, and Sambin. The discussion of these works is aimed at drawing attention to how the complete or partial combination of playback, CCTV, and feedback is employed in their production, as a *conditio sine qua non* for the existence of the works themselves and, at the same time, as a form of experimentation on the limits of the media itself.

5. Dalibor Martinis: Unwrapping the System

As its name suggests, *Open Reel* (1976) by Dalibor Martinis is a work that explores one of the core elements of the videographic medium itself: the magnetic tape that wraps and unwraps around two reels, which in the early days of video were not enclosed in a cassette but left exposed at the top of the VTR. Its mechanism was exactly the same as that of an audio recorder: the unrecorded tape unspools from the first reel, passes through the erase/recording/playback head system, and wraps in the second reel, continuing until the length of the tape is finished. Everything happens within the VTR system.

In Martinis's work, part of this process is halted before it takes place and is displaced elsewhere, far from the VTR. To explain this, it is first essential to describe what is shown in the resulting 3'40" black-and-white ½-inch video. The video camera frames only the artist's head, focused closely on it against a neutral background, which is simply a blank surface. In one hand, the artist holds one end of a magnetic tape, which he presses and fixes to one side of his head. His head then begins to rotate on its own axis, without moving out of the video frame. As a result, the tape he holds begins to wrap around his head, layer upon layer, becoming self-securing. Throughout the entire duration of the video, only this action is shown—until Martinis's head is completely covered by tape and, suddenly, the video image disappears (Martinis 1976).

Figure 1. *Open Reel* (Dalibor Martinis, 1976). Still from video, b/w, sound, 3 min. 4 sec.

It is then that the viewer realizes what has happened during the entire video: the artist's head served as a reel for the tape—specifically, the second reel of the VTR that was recording the action itself. The reel that should have wound the tape was replaced by Martinis's head, positioned far from the VTR and directly in front of the recording camera. It is as if the apparatus were watching its own "evisceration," with part of its "body" taken elsewhere, "recording the image of its own existence" (Martinis 1977, 24). But this elsewhere is not arbitrary: it is the artist's head—the mind that conceived the work of art itself. The video is, at the same time, tautological, witnessing its own act of birth into the world as well as its own death—a return to the mind, after being expropriated from the mechanical body of the VTR.

First of all, as mentioned in the introduction, this conceptual operation by Martinis is very practical and material, and required the open-reel system: it is evident that with a closed cassette system it would have been impossible to substitute the second reel with the artist's head. Secondly, there is the use of CCTV, even if mostly imperceptible. In fact, there are moments at the beginning of the video in which we see Martinis looking straight ahead but slightly off-center, as happens in Vito Acconci's *Centers* (1971), which, as Kris Paulsen explained, is done to check the self-image in the control monitor, set up in CCTV mode. In Martinis's case, he was checking the correct positioning of his head in the

center of the frame and, at the same time, verifying that the tape was wrapping properly. This is evident because at one point he releases the finger holding the tape, as he knows from the control monitor that the tape is now secured through the wrapping. This response of the artist to the video is a form of feedback, because it would not have happened if Martinis had not been watching himself through video.

Finally, there is presumably playback. The video was recorded in the context of the Motovun Encounters of 1976 in Croatia, promoted by the Galleria del Cavallino (Benčić 2024, 53). As it was a context of hybrid production and display of works, it is possible that *Open Reel* was performed live. What does this mean? It means that if there was an audience present during the performance, there must have been a second monitor facing the public and showing the playback from the VTR, not just the CCTV monitor that Martinis was observing. This is because, without playback, the public would have continued to see the images on the monitor even after the tape had run out, thus missing the proper experience of the conceptual work. As said, CCTV does not need the recording of the tape and could show images even without it. But with playback enabled, the monitor would have shown exactly what had just been recorded on tape and, once the tape ended, simply nothing, as experienced from the video preserved. However, as no photographs of the performance showing the audience have been retrieved, this live playback component remains a supposition.

6. Goran Trbuljak: Death in a Split Second

Untitled [Cut] (1976) by Goran Trbuljak was realized in the same context as Martinis's work, in Motovun (Benčić 2024, 53). Trbuljak's black-and-white video lasts barely thirty seconds and depicts one basic action: cutting the ongoing magnetic tape. The camera is static on a tripod, tilted down to frame just the VTR in which two loaded open reels are spinning. A pair of scissors enters the frame and, suddenly, cuts the tape just before the recording/playback head. The viewer sees the cutting and, a split second later, the image of the VTR disappears, replaced by noise, and then the video ends.

Why the image disappears is due to the same reason it happens in Martinis's *Open Reel*: there is no more tape to be read by the metal head of the VTR. But while in Martinis's work this occurs because the reel of tape ends by itself, in *Untitled [Cut]* there is an external intervention—the cutting of the tape. The video camera is again looking at its own core memory—the tape—but also testifying to its killing by recording it (Susovski 1977, 10–12). Like a living being, it can see the scissors approaching to cut the tape, while being capable of doing nothing—just testifying.

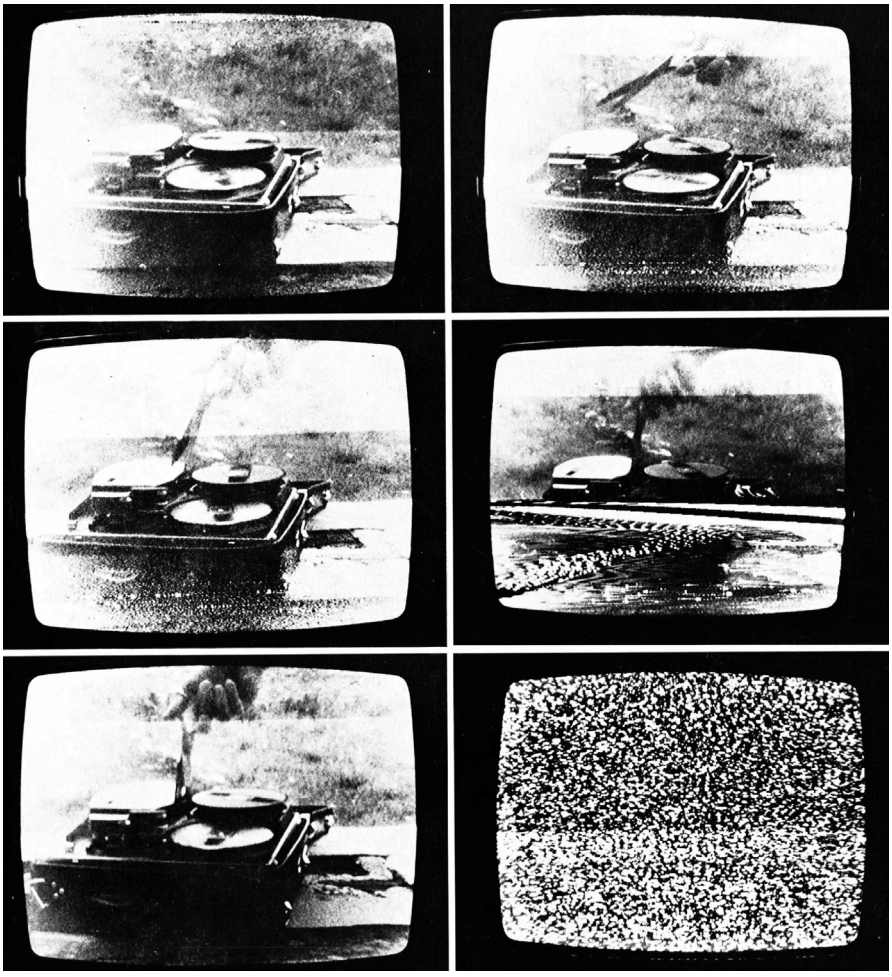

Figure 2–7. *Untitled [Cut]* (Goran Trbuljak, 1976). Stills from video, b/w, silent, 25 sec.

What is even more uncanny is that the image does not disappear at the exact moment of the cut, but a split second later, as if a brain is still receiving visual input from the eyes just after death. In Trbuljak's work, this occurs because the viewer is not watching the CCTV signal from the camera—because if that were the case, the image of the VTR would continue to be shown even after the cut, as mentioned before. Instead, the viewer is watching the playback—what has just been recorded onto the tape.

Because of this, there is little more to see, due to the small physical space between the point of the cut and the magnetic head. In those few millimetres, the head is still recording images before the tape truly ends. This final "finger" of tape thus corresponds to the exact measure of time the video has to witness its own death.

As said, CCTV was not used in this piece. Instead, as is evident, playback is the main subject of the action performed in the video, as without it, conceptually and operationally, the piece wouldn't have worked—the video would not have been able to see its tape cut while being "alive." It is also possible to argue that a form of feedback was employed, even if it does not trigger any concrete sequence of further events. In fact, the noise displayed at the end of the tape is the response to the cutting—a particular, short response that signals the end of communication after testifying to a forewarned "no signal."

The feedback is very short, just a split second, but it functions in a way that warns the viewer about what is going to happen—the end of the tape caused by the cut—and then happens immediately after. Here, feedback functions as a sudden reaction to the witnessing of what is not meant to be seen by the videocamera: the very moment marking the end of the medium itself.

7. Michele Sambin: Reinterpreting the Self

VTR & I (1978) is a video performance by Michele Sambin, first presented during a video workshop at Galleria del Cavallino, and later at Palazzo dei Diamanti in Ferrara and at the gallery of Opera Bevilacqua La Masa in Venice—now Istituzione Fondazione Bevilacqua La Masa (Parolo 2017, 245). The first difference compared to the two other works analysed is the presence of a complex technological setup, consisting of two VTRs, two monitors, and one video camera (in addition to another video camera connected to a video mixer and a U-matic ¾-inch recorder used just for documentation) (Sambin 1978).

The centre of the performance video scene is occupied—just as in the works by Martinis and Trbuljak—by the core of the medium: the magnetic tape. However, in this case, it is looped between two VTRs, with a distance between them that results in approximately 20 seconds of tape. The first VTR is connected to the video camera and set to record. The second VTR is in playback mode, reading what was recorded by the first with a delay of 20 seconds. At their side, there are the two CRT monitors. The first one, on the left, displays a CCTV feed from the video camera, while the second, on the right, shows the playback images. Finally, the video camera is pointed toward this second monitor. The performer, Sambin himself, is positioned between the video camera and the monitor displaying the playback.

Sambin begins the performance by vocalising non-verbal sounds while moving his head, with the sounds and images immediately reproduced via CCTV. After 20 seconds, they also appear on the second monitor as playback. Sambin then gradually modifies his actions in response to these delayed images—an initial level of feedback occurring outside the circuit. However, because the camera is positioned in front of both his head and the playback monitor in the background, the CCTV feed on the left displays a mix of the live performance

and its 20 second delayed playback. This composite is recorded again by the first VTR, creating a second level of feedback—this time occurring inside the circuit.

Figure 8. *VTR & I* (Michele Sambin, 1978). Still from video, b/n, sound, 13 min. 51 sec.

The tape continues its endless journey, looping between the two VTRs, even when Sambin moves outside the frame of the video camera to position himself behind it and begin manipulating the tilt, zoom, and focus. The video camera is now directed solely at the playback monitor, with the performer reinterpreting the recorded images through camera movements, which remain in feedback thanks to the CCTV and the looping system. Lap after lap, the continuous superimposition of recording and playback renders the forms and sounds increasingly uncertain, blurred, and distorted, until the image and the voice from the beginning—Sambin himself—are no longer recognisable before the tapes ends, after mostly 14 minutes.

It is evident how essential playback, CCTV, and feedback are to the existence of this work of art, all operating together in a recursive exploration of the self and its representations through image and sound. Particularly, feedback is explored both outside and inside the circuit: outside, because Sambin responds with his own body to the images he sees; inside, because the video camera is

directed at its own system, while being manipulated in a way that generates a continuous flow of changes in response.

8. Conclusions

As highlighted in all three works analyzed, the direct manipulation of the ½-inch magnetic tape was fundamental to their successful execution: in Martinis's case, because the tape was wrapped outside the reel; in Trbuljak's, because it was cut in the middle of the recording; and in Sambin's, because it was looped to create a distance between two VTRs. None of these actions would have been possible with the ¾-inch U-matic cassette, as the tape inside it was not physically accessible.

The possibility of accessing the tape also opens up the potential to use it spatially—that is, to use the videotape outside its apparatus. This is evident in *Open Reel* and *VTR & I*, where the tape moves, wrapping around the artist's head or looping between machines, but always outside the VTR circuit, in a space that does not belong to the apparatus, but to the performance. Even in *Untitled [Cut]* this is, in a way, true. Once cut, the tape no longer serves any functional purpose for the video apparatus, as it can no longer pass through the playback/recording head just a split second after the cut. It continues spinning with a loose end, agitating into the space beyond the VTR, exposed to centrifugal force.

In addition, the combined use—even when partial—of playback, CCTV, and feedback enables the "improper" use of the videotape: in Martinis and Trbuljak, by allowing both the viewer and the apparatus to "see" the body of video itself—its inscription onto tape and, simultaneously, its death; in Sambin, by playing with the possibility of re-recording over the same portion of tape, fostering a distorted gaze at the self—the performer—while continuously reinterpreting the resulting representation until it is entirely altered. If video was originally conceived as a medium to preserve memory, this particular mode of use does quite the opposite, arbitrarily reworking memory until it is ultimately destroyed.

To resume, video is taken by these three artists, studied in detail, not to conform to its normal functioning, but instead to break it, using the medium at the thresholds of how it is supposed to be used, both conceptually and practically. Today, these practices can be examined through the lens of media archaeology, interpreting the use of videotape as a form of "hacking electronic media" (Parikka 2012, 139). Such practices intervene in the standard circuital flow of the magnetic tape, twisting and deviating it by interacting directly in the space *between* the two reels—between the actions of wrapping and unwrapping.

This "hacking" is, in a sense, what opens the possibility of moving beyond the space of the apparatus into that of performance. All three artists here abandon medium specificity and its spatial and operational limits. I suggest that this

shifting is allowed by an underlying action present in all three videos, which may or may not be intentional on the part of the artists: killing the tape—something I have attempted to render visible in the subtitles of each work analysis. It should also be noted that, etymologically, "hacking" shares something with the act of killing, as it can mean "to cut roughly, cut with chopping blows", "to chop" in the sense of tearing something or somebody into pieces (Etymonline 2025). While this form of killing is evident in Trbuljak's *Untitled [Cut]*—explicit in both the presence of the term "death" in the subtitles I proposed and in the act of cutting itself—it warrants further elucidation in the other two works.

In Martinis's work, the killing is manifested through the action of "unwrapping." As mentioned, the tape is meant to travel from one reel to the other. But if it is pulled from a third element (the performer) outside the system, the apparatus ceases to function properly. In Sambin's case, the killing is embedded in the very process of image registration: the apparatus is designed to record and store an image indefinitely, but in *VTR & I* there is a continuous act of "reinterpretation," rendering the mnemonic function of the VTR purposeless.

But as noted in the introduction, the open-reel system by the late 1970s was already dying due to obsolescence and the transition to the ¾-inch cassette. The act of killing the tape, as I read it in all three works, may be understood as something ritualistic—a final farewell to an early stage of a technology that did not survive the decade, ultimately surpassed by the closed system of the cassette. Even today, in the digital domain, the idea of the cassette survives in the concept of a closed storage system—something not supposed to be accessible to human hands except for maintenance: hard drives, SD cards, solid-state disks, and so on. To lose the possibility of accessing the materiality of video with the body is to lose the possibility of a performative action that engages with the materiality of the medium itself. But in the end, video—much more than film—is a medium whose information is bound to something that, at its source, is not tangible at all: electricity, magnetism, polarized particles. To abandon the possibility of a physical interaction with the support was, perhaps, the linear path and destiny of the video world.

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Techno-Pop: Virtual Doubles and Dystopian Futures Around 1984

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Abstract

As part of wider research aiming at reestablishing the role of postmodernist media art practices to better understanding the current state of the relationships between art and technologies, it feels urgent to reconsider the discourses on virtuality brought forward in the 1980s on the issue of the double, or else on some proto avatars developed around 1984. The essay is articulated around three case studies, those of American artist Rebecca Allen's animated mannequins, Italian collective Giovanotti Mondani Meccanici's bitmap alter egos, and British transmedia character Max Headroom developed by George Stone, Annabel Jankel, and Rocky Morton. At the crossroads of arts and computer graphics, these early virtual doubles allegorized the increasing media saturation of the postmodern times and in so doing anticipated more recent phenomena such as those of the avatar, the metaverse and the digital twin. Rather than adopting a monographic approach, the paper will explore common features between the three, contextualizing them within the history of the double in art—from the historical avant-gardes to the information age—, the condition of displacement typical of video and media art practices, their contribution to the history of animation, their proximities with the dynamics of worldbuilding peculiar of videogames, the cultural frame of postmodernism and cyberpunk, the connections with Electronic Dance Music, and their appeal as pop cultural artifacts.

Keywords: Postmodern; Media Art; Pop Culture; 1980s

Abstract

Nell'ambito di una più ampia ricerca volta a ristabilire il ruolo delle pratiche di media art postmoderne per comprendere meglio lo stato attuale delle relazioni tra arte e tecnologie, appare urgente riconsiderare i discorsi sulla virtualità avanzati negli anni Ottanta sulla questione del doppio, o su alcuni proto-avatar sviluppati intorno al 1984. Il saggio si articola attorno a tre casi di studio: i manichini animati dell'artista americana Rebecca Allen, gli alter ego bitmap del collettivo italiano Giovanotti Mondani Meccanici e il personaggio transmediale britannico Max Headroom sviluppato da George Stone,

Annabel Jankel e Rocky Morton. Al crocevia tra arte e computer grafica, questi primi doppi virtuali hanno allegorizzato la crescente saturazione mediatica dell'era postmoderna e, così facendo, hanno anticipato fenomeni più recenti come quelli dell'avatar, del metaverso e del gemello digitale. Piuttosto che adottare un approccio monografico, il saggio esplorerà i tratti comuni tra i tre, contestualizzandoli all'interno della storia del doppio nell'arte—dalle avanguardie storiche all'era dell'informazione—, la condizione di dislocazione tipica delle pratiche di video e media art, il loro contributo alla storia dell'animazione, le loro prossimità con le dinamiche di worldbuilding peculiari dei videogiochi, la cornice culturale del postmodernismo e del cyberpunk, le connessioni con l'Electronic Dance Music e il loro fascino come artefatti della cultura pop.

Parole chiave: Postmoderno; Media art; Cultura pop; Anni Ottanta

1. Introduction

As part of wider research aiming at reestablishing the role of postmodernist media art practices to better understanding the current state of the relationships between art and technologies, it feels urgent to reconsider the discourses on virtuality brought forward in the 1980s on the issue of the double, or else on some proto avatars developed around 1984. This specific year could be retrospectively identified as a turning moment towards an increasingly virtual society, both in socio-political and in cultural terms, considering the spread of personal computers, the predominance of television on the perception of reality, and a hedonist lifestyle based on wealthier living conditions in the Global North. The same year had been prophetically identified as pivotal four decades before, when British writer George Orwell imagined, in his namesake dystopian novel, a futuristic society in which people were no longer able to distinguish between reality and fiction, their minds being under the subliminal control of a totalitarian regime enacting its power through media (Orwell 1949).

A smart take at Orwell's ominous premonition was proposed by American company Apple when in 1984 they launched the Macintosh, the first personal computer in history "for the rest of us," or else normal people who would use it for everyday activities, including work, leisure, and creativity. Filmed by acclaimed *Blade Runner* (1982) director Ridley Scott and aired on January 22, 1984, during the Super Bowl, the accompanying ad shows a mass of uniformed workers-prisoners marching in a grayish industrial complex and beholding with blank expressions at the speech of a mediated Big Brother-like figure. In plain contrast with the dark scenario, a woman athlete in colored sportswear runs through the facility and hurls a big hammer against the screen, metaphorically defeating the regime. At that point, a voice-over announced: "On January 24th, Apple Computer will introduce Macintosh. And you'll see why 1984 won't be like 1984" (Apple 1983). The message was that the Macintosh intended to turn the traditionally passive television audience into one of active prosumers.

This paper is articulated around three case studies, those of American artist Rebecca Allen, Italian collective Giovanotti Mondani Meccanici or GMM, and British transmedia character Max Headroom developed by George Stone, Annabel Jankel, and Rocky Morton. Recuperating the old models of the mannequin and the robot, they have been chosen as examples of early virtual doubles that allegorized the increasing media saturation of the postmodern times and in so doing anticipated more recent phenomena such as those of the avatar, the metaverse and the digital twin. What they all had in common is that they took shape at the crossroads of arts and computer graphics, that they were open to integrate and even compromise with culture industries, namely television, and established a peculiar exchange with the world of electronic dance music or EDM, notably through collaborations with technopop acts: Allen with Kraftwerk, GMM with Alexander Robotnick, and Max Headroom with Art of Noise.

Rather than adopting a monographic approach, the paper will be developed around common features of the three of them, starting with an overview on the evolution of the experiments with the double in art from the historical avant-gardes to the information age. To frame them within a larger history of media art, there will be a focus on the effect of displacement, typical of early video art. Another aspect to be addressed will be the contribution of these innovative media experiments to the history of animation and, through references to their computer-generated nature, their proximities with the act of world-building peculiar of videogames. Clearly, Allen, GMM and Max Headroom will be also contextualized within postmodernism and cyberpunk, with attention on some features of these two cultural frames such as the idea of hacking applied to television, the connections with EDM, and their appeal as pop cultural artifacts. In conclusion, a few tangible examples of how they anticipated today's virtual doubles will be mentioned.

2. The Origins of the Virtual Double in Art

The possibilities of representing a human being in an artificial setting with a high degree of illusionism go back to the invention of perspective in the Renaissance, which in the 1990s Tomás Maldonado argued being still "the best 'conventional' representation achieved so far. […] no other representation in the past has been able to respond better to our needs for an effective operational relationship—that is, communicative and productive—with the world." (Maldonado 1993, 33). In his innovative treatise *De prospectiva pingendi* (On the Perspective of Painting, 1472–82), Italian painter Piero della Francesca collected his advanced studies on arithmetic, algebra, and geometry providing a new set of technical tools for drawing and painting illusionistic representations of reality. While most of the book is dedicated to perspective per se, bringing forward the theories introduced by Leon Battista Alberti in *De Pictura* (On Painting,

1435–50), the entire first part, titled *Disegno* (Drawing), described techniques for representing human heads and faces. Although the concept of drawing a horizontal or vertical plane section of an object dates to antiquity, no one had proposed before orthogonal drawings of the head Piero della Francesca did, mapping the human features through a web of codes that would allow any artist to accurately depict it in any number of orientations.

When Rebecca Allen developed her computer animation for Kraftwerk's music video *Musique Non Stop* (1986), based on graphic renderings of the heads of the four German electronic music pioneers—that were also reproduced on the covers of the eponymous single release and the album *Electric Café*—, she adopted a similar approach (Fig. 1). Rather than starting from scratch, though, she based her study on mannequin heads reproducing the musicians' somatic features, in the attempt of capturing the usually cold attitude of their personas. In photos documenting the work in progress, one sees Allen as she positions each of the heads under a web of hanging chains, dotted at regular intervals, through which she was able to create maps that were then digitally transposed using a scanner and a facial animation software she developed on her own. The process involved a double layer of mediation: a sculptural mannequin first and then its digital transposition in virtual reality, where it was animated performing basic moves and expressions.

Kraftwerk were not new to the idea of replacing themselves with surrogates. To expand and perform the theories of their concept album *The Man-Machine* (1978), they had commissioned four animatronics with their own resemblances. After *Autobahn* (1974), *Radio-Activity* (1975), and *Trans-Europe Express* (1977), with *The Man-Machine* the group brought forward a peculiar commentary on modern technologies and media communication, meanwhile allegorizing the specters of Nazi Germany and its obsession for efficiency and automation (Spampinato 2023, 63–82). Characterized by a deadpan tone and a machinic rhythm, the sound and lyrics found a performative counterpart in the musicians' cold moves and the uniformed attire, both live and in photoshoots. With the animatronics taking their place on stage, they reinforced this agenda, the robots attempting of humanizing machines while highlighting the dehumanizing aspects of modern life. Allen's outcome was to adapt Kraftwerk's universe to the new dynamics of virtual reality and personal computers.

Figure 1. Album cover of *Electric Café* (Kraftwerk, 1986), Elektra Records. Artwork by Rebecca Allen.

The record cover of *The Man-Machine* shows the four musicians in ascendent line, sporting red shirts and black ties over an abstract graphic configuration reminiscent of Russian suprematist artist El Lissitzky's style, symbolic of the values of modernity. The artwork as much as Allen's work for *Musique Non Stop* echoed an era when avant-garde artists celebrated the man-machine as it artworks of the 1920s to the 1940s by the likes of Italian Futurists such as Ruggero Vasari's performance *L'Angoscia delle Macchine* (1923), with robot-shaped costumes designed di Ivo Pannaggi, and Giannina Censi's *Aerodanze* (1930–31), in which she executed dance moves simulating the dynamics of a flying aircraft. The mechanical nature of these beings was recuperated in the postmodern age by Kraftwerk and Allen, and it is evident in the other two case studies selected, GMM and Max Headroom, not because they shared the same principles, but to highlight the automated conditions of contemporary forms of mediation and codification.

3. Computer Art and the Information Age

Possibilities of codification of reality saw a turn in the 1950s with the introduction of transistors, which led the way to the information age, an era dominated by growing processes of informatization that immediately got the interest of artists too. Exhibitions such as *Cybernetic Serendipity: The Computer and the Arts* (1968) at ICA, London, *The Machine as Seen at the End of the Mechanical Age* (1968) at MoMA, New York, and *Software: Information Technology: Its New Meaning for Art*, (1970) at the Jewish Museum, New York, presented pioneering media artworks such as Leon D. Harmon and Kenneth C. Knowlton's *Mural* (1966), obtained by scanning a photograph of a reclining woman nude and converting it to binary numbers which were assigned typographic symbols based on halftone densities. The image, which was reproduced several times, was long considered an early demonstration of the endless possibilities of manipulation of reality by reducing it to a data set, but it didn't come without sexist bias as is often underlined today.

As part of the renowned interest for early forms of computer art, a new series of exhibitions have been recently organized, including *Electric Dreams: Art and Technology Before the Internet* (2024) at TATE Modern, London, and *Radical Software: Women, Art & Computing 1960-1991* (2024) at Mudam, Luxembourg. Both shows highlighted the role of women in media art history, citing Donna Haraway's cyberfeminist theories of the 1980s. Lynn Hershman Leeson's *X-Ray Woman* (1966), for example, made the same year as Harmon and Knowlton's *Mural*, depicted a woman nude but from a different perspective, visualizing a mechanical organism as a tool for empowerment and emancipation. A feminist perspective also emerged from Rebecca Allen's early works such as *Girls Lift Skirts* (1974), a 13-second computer animation showing a woman seductively lifting her skirt, her revealed legs, suspenders, and underwear being coded by numbers, which according to Tina Rivers Ryan "parodies the fetishizing of women's bodies by male computer artists" (Rivers Ryan 2024, 140).

Giovanotti Mondani Meccanici have recently undergone a process of reconsideration too, albeit limited to Italy so far. Founded by Antonio Glessi and Andrea Zingoni in Florence in the late 1970s, between 1984 and 1987 they created a saga of computer comics whose protagonists were three cyborgs in suit and black sunglasses called Giovanotti Mondani Meccanici (Mundane Mechanical Youths), the alter egos of the artists themselves and an embodiment of postmodern cynicism. The comic strips were created with an Apple II, the computer that predated the Macintosh. Based on scripts written by Zingoni, the figures were traced by Glessi using an optical pen on a cold graphic tablet in an 8-bit expressionist style, on a surface of about 150 × 250 pixels and a range limited to only six colors. A perfect example of 1980s personal computer art and the idea of the double examined here, GMM's computer comics were published on *Frigidaire* magazine and some circulated as videos in art circles, but first and foremost they existed as files.

4. Learning from Video Art: Mediation and Displacement

Another way to frame these case studies in art-historical terms is to read them in line with early video art practices, namely those single-channel videos and installations that explored the peculiar possibility of simultaneity offered by the introduction of video technology. Frank Gillette and Ira Schneider's installation *Wipe Cycle* (1969), for instance, an allusion to the spread of CCTV cameras, presented a wall of monitors inside a gallery space transmitting delayed images of the visitors filmed by security cameras installed at the entrance. Another relevant artwork was peter campus' *Three Transitions* (1973), a single-channel video showing three interactions of the artist with his own pre-filmed mediation. According to Rosalind Krauss, "The double that appears on the monitor cannot be called a true external object. Rather it is a displacement of the self which has the effect of transforming the performer's subjectivity into another, mirror, object" (Krauss 1976, 55). Both examples reflect indeed the artists' preoccupations for video's fragmentation of identity.

Giovanotti Mondani Meccanici never used video in such a way. Their video versions of the computer comics were constructed as animated sequences of the strips, with fades between the illustrations, a voice over, and a soundtrack. And even when in the late 1980s they produced more complex video installations, none of them aimed at deconstructing the mechanism of mediation itself as in the cases above. However, in narrative terms, displacement is a crucial issue in their production considering, for instance, some illustrations from the computer comics series, such as the one published on the cover of *Frigidaire* magazine (issue 46, September 1984), in which one of their characters is shown headless, his head being broadcast on a TV screen he's holding. Let's consider also the performative side of the computer comics, consisting in improvised public appearances of three performers dressed like the Giovanotti Mondani Meccanici, who elicited the contraposition between virtual and real selves.

Being a character living in the cyberspace, Max Headroom is nothing different. Originally created by George Stone, Rocky Morton, and Annabel Jankel for the movie *Max Headroom: 20 Minutes into the Future* (1985), it became the character of a TV show for Channel 4 in the UK (1985–87) and later ABC in the US (1987–88). Although being introduced as "the first computer-generated TV presenter," he was not created with a software but through a prosthetic makeup, contact lenses, and a plastic suit that reinforced the mechanical look of a real actor. Wit and self-confident, his personality satirized the arrogance of 1980s TV hosts and the capacity of the media to produce consensus. As far as the story set in a dystopian future goes, Max Headroom was the digital displaced incarnation of journalist Edison Carter, developed by an AI system after he had a motorcycle incident. Carter used to be a trouble-making journalist whose investigations aimed at exposing the unethical conduct of an oligarchy of TV networks that ruled the world.

5. In Light of the History of Animation

Another important element to consider for framing these doubles is how they related and eventually contributed to the evolution of animation, which is punctuated by innovative approaches at the crossroads of arts and tech. Based on a similar take to codifying the human body as that introduced by Piero della Francesca, Ed Catmull and Frank Parke's video *A Computer Animated Hand* (1972), created as a graduate course project, showed an animated hand rotating in multiple directions, obtained by dividing a plastic replica of Catmull's left hand in 350 triangles and polygons, then scanned and animated. Not content with simply animating drawings as in *Girl Lifts Skirt*, Rebecca Allen developed a similar process but extended it to a whole body as in the case of *Swimmer* (1981), a 6-second video of a woman swimming produced at the Computer Graphics Laboratory at New York Institute of Technology, which was then directed by Catmull, who will prove to be a crucial figure in the history of animation also as a co-founder of Pixar in 1986.

In an interview for the recent *Radical Software* exhibition catalogue, Allen has reminded: "At that time, if you wanted software, someone had to invent the algorithms and write the programs themselves because there wasn't any commercial software yet. We had to invent and develop the foundational ideas for modelling, rendering and animation software as well as the interfaces needed to use it. However, it felt good to invent something that was both artistically and technically new […]. Also at that time, the art world was viscerally opposed to artists' use of computers. I think I have made my whole career in an area of art that no one accepted as such" (Allen 2024, 155). Unlike other pioneers who gravitated around the Computer Graphics Laboratory such as Catmull, John Warnock and Alvy Ray Smith, who all founded soon-to-become major companies such as Adobe Systems and Pixar, Allen's approach has always remained a purely artistic one. Notwithstanding, her experiments with 3D human motion soon brought her to more advanced projects as with *Catherine Wheel* (1982), a computer-generated dancer playing the role of St. Catherine in the namesake dance performance choreographed by Twyla Tharp, with a soundtrack by David Byrne.

During the 1980s, advancements with 3D human motion found their way more in media industry than in the arts, starting with *Tron* (1982), a movie directed by Steven Lisberger and produced by Walt Disney that is considered the first commercial product to feature a prolonged use of computer-generated 3D animations, around 15 minutes in total. The narrative revolved around the adventure of a videogame maker who entered the digital world he was designing, a gridded environment regulated by a security system named Tron. The movie's displacement of real characters into the virtual scenario is based on the speculative potential of artificial doubles to perform in ways a real human being

couldn't afford. The same is true for one of the most popular music videos of the decade, a-ha's *Take on Me* (1985), directed by Steve Barron, in which a couple's love relationship and communication is complicated by a continuous shift between a physical and a hand-drawn world, an allegory of the alienating impact of media fantasies.

Both Max Headroom and Kraftwerk under Allen's treatment fit in this lineage as it is particularly evident if one compares the original performers and their doubles on screen, their resemblance to the original being of utmost importance. In the case of Max Headroom the choice of simulating the digital effect was deliberate as argued by one of its creators, Rocky Morton, in an interview: "[It's] the face. The human face. We'll just use the actor's face and just make it appear as if it was computer-generated by putting prosthetic make-up on it, and then shooting it in a certain way; we could make it look like it's computer-generated" (Schmidt-Rees 2020). Various photos show the process of transformation of the actor Matt Frewer during different phases of heavy make-up until he was transformed in Max Headroom. And for Allen too, even though her Kraftwerk doubles were computer-generated, the correspondence with their original features was crucial, as it emerges by simply comparing photos of them with their animated mannequins.

6. Worldbuilding as a Metalinguistic Take on Gaming and Gamification

Part of the appeal of the three case studies discussed here is based on the aesthetic language of 8-bit videogames of the time. Videogames, the most productive among today's media industries, had a massive role in popularizing computer culture. In the 1970s, before personal computers such as the Apple II and the Macintosh even existed, consoles for playing videogames such as Pong, Atari, and Intellivision entered the domestic space, alphabetizing users to a new visual language and legitimizing the possibility of building worlds by pixels, or else sequences of basic squared units of programmable color on a TV screen or computer display. More than the actual gaming dynamic and the characters, the most innovative aspect of videogames is in fact related to the concept of world-building, the process of constructing a virtual and fictional world in geographic terms, but also its history and culture, recuperating old styles for image-making through small units, such as mosaics or the textile techniques of crochet and embroidery.

Giovanotti Mondani Meccanici opted for comics and video because they felt these mediums were more suitable to their stories of cynic violence and alienated dystopia. However, their computer-generated pictures clearly shared a lot with videogames, in terms of storytelling and subcultural tropes, but mostly

for their aesthetics. Part of the renowned interest for GMM today is in fact due to their 8-bit nature, which is an aspect I highlighted when I had the chance to edit a publication that collected their computer comics (Spampinato 2021). On one side, we proposed a digital remastering of the comics, re-enacting with more advanced tools the original transcodification process, which consisted in taking photos of the individual illustrations on a TV screen and then printing them out for either publication on *Frigidaire* magazine or a video montage. On the other side, being files, we enlarged some of them on double-page spreads and one time on a huge billboard in Milan,[1] highlighting how striking an image composed by a bunch of pixels could still be.

A quintessential postmodern character, Max Headroom transmigrated between media and bodies. Afterall, its audience was used to consuming contents in various formats, from TV to music videos to videogames, and on various supports, from VHS to floppy disks. Making a licensed Max Headroom videogame was a logical choice and a commercial venture as well. Released by Quicksilva in 1986 for Amstrad CPC, Commodore 64 and ZX Spectrum, it was based on the same narrative of a future society dominated by the TV industry, with Max Headroom being held hostage by a global TV network on the 210th floor of the company's headquarters. The player controls the character of journalist Edison Carter, who moves throughout the skyscraper thanks to two elevators, the corridors being patrolled by anthropomorphic robots. The 8-bit graphic was very basic and the game didn't meet the players' expectations, but it certainly reinforced Max Headroom's virtual persona and presented it for the first time as a truly computer-generated character.

GMM and Max Headroom are representative for understanding how dynamics of worldbuilding and storytelling born within literature, the visual arts and cinema consolidated through videogames since the 1970s. What they share, unlike most videogames, is a metalinguistic take at worldbuilding and storytelling, entertaining yet developing a critical reflection on media. In so doing, they fit in a trajectory of hybrid media objects that similarly analyze the impact of gaming and gamification. Take for instance the movie *Nirvana* (1997) directed by Gabriele Salvatores, in which a videogame character, an actor in the flesh, not computer-generated, becomes self-aware of his fictional existence. Or consider American artist Ian Cheng's AI-driven video animations, or else videogames that play themselves, exemplary of his fascinating theory on worldbuilding or worlding as a practice for creating autonomous universes, as when he argues: "A World is a future you can believe in: One that promises to survive its creator, and continue generating drama" (Cheng 2018, 17).

1 A billboard reproducing an image of Giovanotti Mondani Meccanici's computer comics was installed at Spazio Maiocchi in Milan for the 2021 edition of Sprint artists' book fair, as part of a series of initiatives developed on the occasion of the book edited by Francesco Spampinato and published by NERO.

7. The Postmodern Nature of the Computer-Generated Double

The virtual doubles produced by Allen, GMM and the team behind Max Headroom are typical postmodernist artworks, because they reveal the mechanisms of media and their impact on human psychology and behavior in the postmodern age. Other postmodernist artists adopting and addressing media such as Laurie Anderson or Gretchen Bender did that from a similar angle, but the peculiar aspect of the three cases selected here is their hybrid nature and how they were able to circulate in the very media scenario they ultimately deconstructed. They are postmodernist also because they incarnate various postmodern features as they have been theorized in the 1980s by thinkers like Fredric Jameson, Jean Baudrillard, and Donna Haraway. A computer-generated double is indeed based on an artificial reconfiguration of natural elements, in line with Baudrillard's theories of simulacrum and Jameson's idea of pastiche, while their artificiality can be interpreted as a tool for empowerment as in Haraway's cyberfeminist theory, notably in Allen's case.

These media artworks are postmodernist also because they reveal the subliminal logics of consumerism and mass media's power to invent models with which viewers passively identify, meanwhile acknowledging the appeal of emerging prosumer technologies. Similar issues were considered within the realm of mass media as well, an interesting case being the movie *Looker* (1981) directed by Michael Crichton, an early critique of cosmetic surgery, also known for showing the first computer-generated 3D model of a human being, way more advanced than Allen's *Swimmer* of the same year. A scene shows the process of creation of a virtual woman, "perfect" according to the canons of beauty industry, the fictional codified body being a metaphor of the shift from passive TV voyeurship to viewers' activation, as when Baudrillard's argued: "In place of a reflexive transcendence of mirror and scene, there is a non-reflecting surface, an immanent surface where operations unfold—the smooth operational surface of communication" (Baudrillard 1983, 126–27).

In comparison with *Looker*, although less sophisticated, Allen's music video for Will Powers' synth-pop song *Adventures in Success* (1983) appeared way more critical, not only of consumerism and cosmetic surgery but also of media's objectification of women, which is an aspect the movie failed to properly address, in line with the work of likeminded postmodernist feminist artists like Dara Birnbaum, Barbara Kruger, and Cindy Sherman. As Will Powers—the nom de plume of celebrity photographer Lynn Goldsmith—proposed a parody of self-help motivational techniques and related identity troubles in the postmodern times, Allen produced a video animation filled with symbols of success and a chorus of rotating masks to which the singer's identity is delegated, each mask revealing her virtual face both on the outside and the inside. As

this award-winning music video entered in heavy rotation on MTV and VH1, its critical stance was even reinforced in contrast with the misogynist vocabulary of various hard rock music videos of the same era.

Similarly, Giovanotti Mondani Meccanici and Max Headroom embodied the postmodernist idea that human beings could now be cyborgs—hybrid creatures combining biological and technological elements—or even replaced by entirely artificial beings. In one of GMM's comics, *GIOVANOTTI MONDANI MECCANICI DIVENTANO BUONI* (1985), one of the characters is broken down to pieces revealing its artificial nature, as is traditionally the case with Max Headroom (Fig. 2). GMM's production is quintessentially postmodernist also considering the group's interdisciplinary approach, at the crossroads of various forms of artistic expression and communication, their ability to prefigure future possibilities of media convergence, and their citationist take on history. Some of their narratives, indeed, echo Jameson's idea of pastiche, or else the imitation of previous styles and narratives, as when they encounter historic figures like Julius Caesar or literary characters like the Count Dracula, both of whom end up being murdered by GMM under hilarious circumstances.

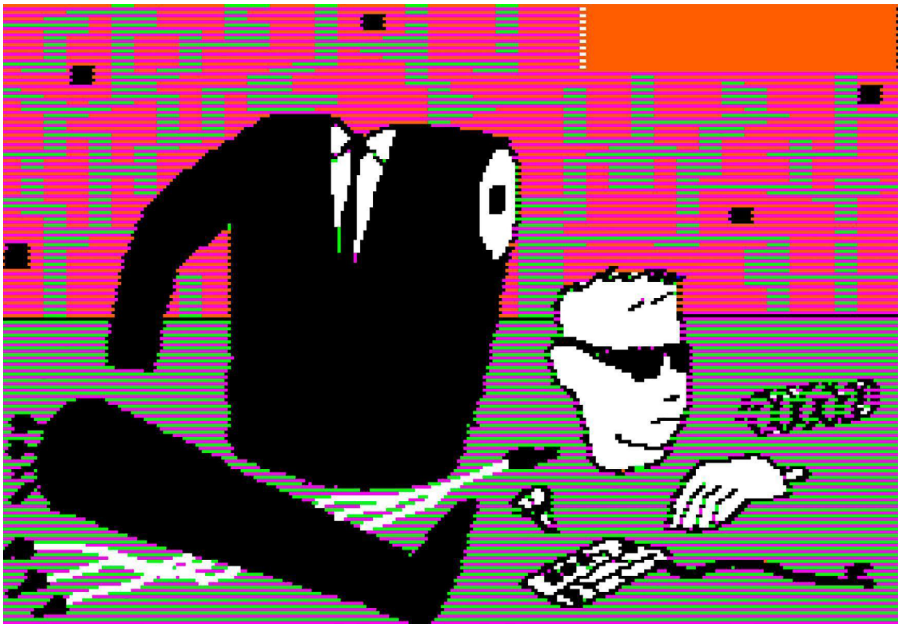

Figure 2. Strip from the computer comics *GIOVANOTTI MONDANI MECCANICI DIVENTANO BUONI* (Giovanotti Mondani Meccanici, 1985), *Frigidaire* 60/61. Courtesy the artist.

8. Aesthetics and Narratives of Cyberpunk

The three case studies selected here could be interpreted also through the lens of cyberpunk's aesthetics and narratives. A subgenre of science fiction emerged in the late 1970s, cyberpunk novels, movies, comics, and videogames are set in a dystopian future characterized by the contrast of low-life and high-tech, in societies of control ruled by totalitarian regimes that exert their power through mass media and advanced forms of technological surveillance. The punk element is usually embodied by either righteous rebels or street gangs, who move between dangerous metropolises, no man's lands, and virtual worlds, or else the cyberspace, a concept introduced by William Gibson in his foundational cyberpunk story *Burning Chrome* (1981) and developed in *Neuromancer* (1984): "a consensual hallucination experienced daily by billions of legitimate operators, in every nation […]. A graphical representation of data abstracted from the banks of every computer in the human system" (Gibson 1984, 49).

As cyberpunk entered the public unconscious through cinema, an early case being the movie *Blade Runner* (1982) directed by Ridley Scott, it is important to highlight how the artists discussed contributed to this cinematographic genre, from *Max Headroom: Twenty Minutes into the Future* (1985), the movie that launched this fascinating character, to GMM's prophetic visual language as when in *GIOVANOTTI MONDANI MECCANICI CONTRO DRACULA* (1984) the three cyborgs' heads stand out against a digital rain of green codes, a mesmerizing graphic abstraction that will be popularized by *The Matrix* (1999). For better understanding their meaning, it's useful to quote an essay published by Franco "Bifo" Berardi in 1992: "In the cyber sphere the first person becomes a projection of worlds […]. Cyberpunk sees simulation as a prosthesis of the bioconscious organism […]. We witness here the creation of a neoreal. The neoreal is the space of a shared hallucination […]. Cyberpunk begins to imagine cyberspace as a prosthesis of the body" ("Bifo" Berardi 1992, 11–13).

Directed by Rocky Morton and Annabel Jankel and produced by Crysalis Visual Programming for Channel 4, the 57-minute movie *Max Headroom: 20 Minutes into the Future* portrays a near-future in which corrupt corporations dominate much of the world and manipulate the public to increase their ratings and wealth. While the righteous hero, journalist Edison Carter, recovers from a motorcycle incident, his AI clone Max Headroom continues the fight for justice and transparency delivering stinging commentaries on Network 23 and the TV regime the network has established, through a TV show aired by pirate TV station Big Time. The movie and the following Max Headroom saga confirm Gibson's and Berardi's considerations on the cyberspace as a virtual world made of abstract data taking the shape of luminescent parallel lines and patterns, an extension of the journalist's double, a hallucination shared by an audience that feels empowered by the possibilities of overturning the social order through the world's unregulated extension.

The idea of cyberspace, as it emerges both from the Gibson and Berardi as well as from the cases analyzed foresighted the birth of the World Wide Web. While the Internet existed since the 1960s, it was accessible only to a few people, mostly working in the military and scientific sectors, until British computer scientist Tim Berners-Lee perfected the World Wide Web at CERN in Geneve around 1989–90. Thus, the idea of the cyberspace saw a turn as a virtual world that was finally accessible to anyone. This is reflected in new cyberpunk narratives as in Neil Stephenson's novel *Snow Crash* (1992), which has the merit of introducing the metaverse, a concept that will be adopted during the Covid-19 pandemic by Facebook founder Mark Zukerberg, at the dawn of today's new era characterized by the faith in virtuality and AI. In Stephenon's words: "The people are pieces of software called avatars. They are the audiovisual bodies that people use to communicate with each other in the Metaverse" (Stephenson 1992, 35–36).

9. Hacking and the End of the Television Era

Allen's experimental doubles and the GMM and Max Headroom characters certainly anticipated the advent of the World Wide Web and the ideas of metaverse and avatar that are consolidating in today's media scenario, mostly by investigating potential forms of telepresence, or else adopting animation technologies to bring human beings, through their animated surrogates, in places they were not physically in, redefining reality as an interactive experience beyond the physical world. However, being born in the 1980s, most precisely around 1984, they also reflected the media dynamics of their own time, a time in which the dominant mass medium was neither the computer nor the Internet, but television as Orwell had anticipated thirty-five years before. Along with Ridley Scott's ad for the Apple Macintosh, back then references to Orwell's 1984 dystopia of a society ruled by TV also emerged from popular movies such as David Cronenberg's *Videodrome* (1983) and John Carpenter's *They Live* (1988). Both addressed TV's subliminal power to indoctrinate viewers through allusions to emerging prosumer technologies turning viewers into users, or else prosumers that were able to take control over technology, namely hacking television in the name of a free and more just society.

Visual and conceptual references to media and hacking are scattered throughout GMM's whole computer comics cycle. In *GIOVANOTTI MONDANI MECCANICI E IL SERGENTE DI FERRO* (1984) they virtually encounter society's ruthless leader, the Iron Sergeant, a Big-Brother-inspired character at the head of a military dictatorship, who keeps the population under control by delivering daily speeches and propaganda from the state's TV station. As they watch their own profiles appearing on TV as wanted criminals, described by the Sergeant himself as a particularly dangerous gang for their ability to infiltrate

the cyberspace and even dreams, they firmly point the remote control to the screen making the Sergeant chocking to death. The humoristic, analog act of killing the oligarch in such a way could be considered a metaphor of hacking itself, as the artists will later argue: "[We are] hackers of the imagination, we sneak into systems bypassing their protections, leaving a sign of our passage. We blend in, but we do not integrate" (Bolelli and "Bifo" Berardi 1988, 121).

Fantasies of hacking TV through emerging prosumer technologies are at the base of Max Headroom's whole story: a journalist's virtual double taking life in the cyberspace thanks to an AI system, broadcasting from a pirate TV station and sabotaging mainstream TV through invectives and witty comments, this virtual character impossible to be captured or annihilated. Interestingly enough, Max Headroom's appeal as a hacker inspired real hackers, who on November 22, 1987, highjacked the signals of WGN-TV and WTTW in Chicago, interrupting the programming two times, for 25 and 90 seconds, during which unknown individual wearing Max Headroom masks appeared on screen. On a corrugated metal background that simulated the digital environment of the original show, the hijackers delivered distorted messages such as "Catch the wave," and performed schizophrenic moves and actions including a woman spanking a masked man with a flyswatter. A sensationalistic example of broadcast signal intrusion, it seems Max finally got real (Fig. 3).

Figure 3. Unidentified person dressed to resemble the character of Max Headroom in a pirate broadcast, WGN-TV and WTTW, Chicago, November 22, 1987.

Allen never addressed television per se but being developed for a music video, Kraftwerk's virtual clones clearly reflected their media condition, as surrogates suitable for entering both the "hyperreal" world of TV and the "neoreal" universe of the cyberspace. Cold, alienated, and machinic, their association with Orwell's dystopia was later highlighted by video art pioneer Nam June Paik who selected this video among others to be broadcast through his installation *Fin De Siecle II* (1989), a wall made of almost 200 monitors of three different sizes, synchronized by groups. Paik, who had anticipated forms of TV hacking in the information age, notably with *Participation TV* (1963) that allowed visitors to manipulate a TV broadcast by speaking sounds into a microphone, conceived this monumental installation to reflect how TV saturated viewers, influencing their behavior and their perception of reality: what could be better than a group of digital mannequins reciting at unison onomatopoeic words as a metaphor of a lobotomized TV audience?

10. Technopop or the Birth of Electronic Dance Music

Technopop was born in the 1980s as a subgenre of new wave music, often used as a synonym of synthpop considering the predominance of synthesizers, drum machines, and sequencers. However, it's machinic rhythm and the reduction of vocals made it quite distinct from synthpop and more like a predecessor of techno music. Although the term "technopop" is adopted here in a wider perspective, encompassing the visual and the performative sides of the three case studies, their peculiarity also consists in a strict relationship with the technopop music genre, starting with Kraftwerk. Developed out of 1970s krautrock, a German version of progressive rock, over time Kraftwerk perfected a peculiar style of electronic music with increasing danceable rhythms, first in *Trans-Europe Express* (1977) then *Man-Machine* (1978) then *Computer World* (1981). With *Electric Café* (1986), their ninth studio album, their sound became definitely technopop as it is confirmed by the fact that the album's title should have been *Technopop*.

Allen's Cubist-like multifaceted virtual heads of the four group's members appear on the album's cover in bluish tones over a black background, while their stripped-down reticular version is used in white for the cover of the single release of "Musique Non-Stop." The first side of the album is a long suite of three tracks: "Boing Boom Tschak," "Techno Pop," and "Musique Non-Stop," each connected using the track titles and other phrases in a spoken manner over a few bars of bass melody and regular beats within the 100–130 BPM range. Along with tracks from previous albums such as "The Robots" and "Numbers," the tracklist of *Electric Café* was particularly inspirational for the birth of techno music in Detroit, and Kraftwerk's proto-avatars became the blueprint for countless machinic beings, such as those designed by Abdul Qadim Haqq for Model

500's album *Classics* (1993), which allegorized the condition of discrimination of African-American people in a city that used to be the cradle of American industry, now at the verge of economic and social collapse.

Technopop was an earliest incarnation of today's electronic dance music or EDM, an umbrella term encompassing various electronic music styles characterized by danceable rhythms: Italo disco, techno, house, drum and bass, dubstep, and trance, among others. The fact that a member of GMM, Maurizio Dami a.k.a. Alexander Robotnick, was also an EDM pioneer confirms the group's connection and contribution to the evolution of the genre. Renowned for "Problèmes d'amour" (1983), a hybrid Italo-disco track that is considered today a classic EDM hit, Robotnick developed the soundtracks for the group's videos and installations. The musician, who combined traditional technopop gear such as the Roland TR-808 with music software available for the Apple II, the same personal computer GMM used for their computer comics, was also behind GMM's 1985 eponymous album and the single release "Don't Ask Me Why." This was accompanied by a music video directed by GMM in collaboration with media art collective Studio Azzurro, based on the visual contraposition of the three pixelated characters with the three original performers.

Max Headroom's connection to EDM is related to the collaboration with British synth-rock group Art of Noise on the track "Paranoimia" (1986), a portmanteau of "paranoia" and "insomnia," echoing aspects of the postmodern condition with hints to cyberpunk tropes. The single release features a spoken monologue by Max Headroom, one for the 7-inches and one for the 12-inches version. While in the former the virtual journalist confesses being scared and unable to sleep, suggesting that digital characters follow biorhythms like those of human beings, in the latter he plays the master of ceremonies, talking about the music and making fun of the band members. Slow-paced and more experimental than a typical technopop track in the vein of Kraftwerk, the first version was the one used for the official music video, which shows a TV-set on a wheelchair broadcasting Max Headroom, his stuttering glitches turned into a metalinguistic dance performance, symbolizing that uncanny awake-asleep phase in which fantasy is easily mistaken for reality.

11. Coolness/Coldness: The Media Appeal of Doppelgangers

Part of the appeal of these digital beings was due to their coolness, being impassible while the idea of reality, or else the "grand narratives of modernity" to put it in Jean-François Lyotard terms, started collapsing. Unfriendly and cynical, their coolness was less that of post-War hipsters such as jazz musicians and beat writers, than resonating with the iciness of the coeval Cold War, that

state of conflict between the world's two mega-powers, US and Soviet Union, characterized by atomic threats, espionage, competitiveness, and propaganda. Being virtual doubles or doppelgangers, they echoed countless literary and cinematographic Cold War narratives featuring spies, double agents, and other characters hiding their real identities, starting with their formal attire: short haircuts, black suits with slim ties, and large Ray-Ban Wayfarer sunglasses, the favorite shades of 1980s hipsters. GMM admitted their inspiration for such an outfit came from the Ska music subculture but clearly ended up inspiring the look of Quentin Tarantino's ruthless *Reservoir Dogs* (1992).

These cold-blooded characters also represented the dark side of Wall Street brokers, anticipating fictitious white collars such as the unscrupulous Gordon Gekko in Oliver Stone's movie *Wall Street* (1987) and the narcissistic-cum-psycho-killer investment banker Patrick Bateman in Bret Easton Ellis' novel *American Psycho* (1991). While critiquing the world of finance and neo-liberalism, they contributed to the popularization of these anti-heroes. Max Headroom's attractiveness brought it to grace the covers of popular magazines, from *Newsweek* to *Mad*, and being interviewed by David Letterman in his eponymous TV talk show. However, its success brough Max Headroom to sell-out, becoming a brand for selling VHS, publications and gadgets, and turning from an anti-corporation parody of a commercial TV presenter into a global spokesperson for Coca Cola, featured in various commercials and delivering messages such as "Catch the Wave," the phrase that will be recited by the hackers of the 1987 TV highjack to highlight the betrayal.

As consumerism perpetrated in daily life through pop and media culture, the fact that these surrogates circulated on TV shouldn't be considered as a weakness. On the contrary, finding their way in the media industry allowed the artists to infiltrate the very mechanism they aimed at critiquing, while respecting its basic need to entertain the audience. After the computer comics, in 1985 GMM developed *Le avventure di Marionetti*, an 11-episodes series that was aired on Italian first state TV channel Rai Uno as part of the program *Non Necessariamente* (1986–87). Made by digitalizing and post-producing photographs of performers, the series follow the adventures of a clumsy character named Marionetti, a postmodern parody of Italian Futurist leader Filippo Tommaso Marinetti and of all the values he incarnated. Far from the merciless cyborg of the computer comics, this comical character pokes fun at TV itself, the hedonistic lifestyle of the postmodern age, and the vacuity of media spectacle, skeptical of the role of avant-gardes after losing their goals.

12. Foreseeing the Future, or Today's Seamless Condition

GMM and Rebecca Allen flirted with commercial culture but never compromised with it to the degree the Max Headroom's team did. Rather, they sticked to the art circles, developing more advanced projects for exhibitions. GMM kept experimenting with the idea of the virtual double by exploring the possibilities for interaction offered by new computer systems. In the installation *Buddha Vision* (1991), users could interact, through their live simulacra on a screen, with a digital shower of lotus flowers, activating sounds composed by Alexander Robotnick on a pentatonic scale every time they touched one. The playful activity, which reminded typical videogaming dynamics, was in fact introducing the very concept of gamification, ahead of its time, or else how media technologies were providing more simulated experiences, the result of live performing having direct impact in the virtual space. Still far from today's forms of immersion such as those allowed by VR systems, this interactive installation allowed any user to instantly deal with a digital surrogate.

Still active today, Kraftwerk only had very few releases since the 1990s, but they kept working on their repertoire, with new remixes, new design for online outlets, new packaging for the physical releases, and continuous remediations. The visual material developed for their 1970s and 1980s productions, including Allen's digital music video for "Musique Non Stop," was resuscitated in 3D concerts, with Kraftwerk still touring despite only one of the original founding members, Ralf Hütter, has remained. Through the retrofuturistic technique of anaglyph 3D—a slap in the face at today's advanced technologies but not dissimilar in the effects—, Kraftwerk's audience sees a large-scale 3D version of Allen's video featuring their digital doppelgangers, who play in a minimal, abstract, virtual world behind the stage, a world that is in fact out of time and space, a world they never left despite the other founder, Florian Schneider, has died and other two historic members left the group.

A peculiar characteristic emerging from the virtual doubles discussed here, notably Kraftwerk's digital surrogates, also at the base of today's avatars and digital twins, is their immortal nature. British artist Ed Atkins, for instance, a pivotal figure in the post-Internet generation, is known for the video works of the 2010s featuring his own avatars, which he started developing to meditate on death and the sense of "losslessness" embedded in today's digital life, or else the nullification of the sense of mortality and loss that characterizes human life. (Atkins 2018, 80–97). British music producer Sophie addressed similar issues in *Faceshopping* (2018), a song about the fragmentation of identity online and the possibilities of creating new identities through digital technologies, resonating with the artist's own path as a trans woman. The accompanying music video features an emotionless avatar of the artist, her face being transformed in

various ways, objectified and lifeless, an eerie premonition of Sophie's premature death only a few years later.

The avatar and the metaverse, two phenomena that consolidated in post-pandemic times, or else the early 2020s, are at the base of a new psychological, social and cultural condition that we can define "seamless," a perceptual condition of the real-virtual continuum that I have identified elsewhere as being characterized by the following properties: timelessness, simultaneity, the effect of dislocation, the interactive dimension, the illusion of continuity, and the nullification of the sense of mortality and loss in a disturbing transhumanist perspective (Spampinato 2025). AI software, which spread since the launch of ChatGPT in 2022, have even accelerated this condition with deepfakes, more illusionistic replicas or objects and beings. Crafted with rough technologies, the interest for the technopop virtual doubles conducted here doesn't lie merely on their media-archeological nature, but on the fact that their naïveté helps better understanding the origins of present dynamics of visuality and virtuality, teaching how to distinguish the real from its digital twin.

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Navigating the Frame: Videoart, Lines of Flight, Deixis*

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Abstract

This chapter approaches the media archaeology of contemporary telepresence arguing that some key aspects of such a configuration shall be found in videoart from the 1970s. To demonstrate this thesis, the text delves in particular into the symptomatic use of spatiality across on- and off-screen dimensions. The concept of deixis and de-/re-/territorialisation prove to be useful lenses to look at the way in which artists use technology and their body to craft an image of presence that represents the antecedent of what we experience today via video-calling, telerobotics and virtual reality in order to respond to distance and displacement.

Keywords: Video Art; Spatiality; Deixis; Media Archaeology

Abstract

Questo capitolo affronta l'archeologia dei media della telepresenza contemporanea, sostenendo che alcuni aspetti chiave di tale configurazione si ritrovano nella videoarte degli anni Settanta. Per dimostrare questa tesi, il testo approfondisce in particolare l'uso sintomatico della spazialità nelle dimensioni dentro e fuori dallo schermo. I concetti di deissi e di de-/ri-/territorializzazione si rivelano lenti utili per osservare il modo in cui gli artisti utilizzano la tecnologia e il loro corpo per creare un'immagine della presenza che rappresenti l'antecedente di ciò che sperimentiamo oggi attraverso videochiamate, telerobotica e realtà virtuale, al fine di rispondere alla distanza e allo spostamento.

Parole chiave: Videoarte; Spazialità; Deissi; Archeologia dei media

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1. A Flavor for Space and How to Navigate It

Navigation entails space. That is because in order to traverse or, as the dictionary recalls, "to steer a course through a medium" (Merriam-Webster, n.d.), we need indeed a medium to move across and for any subject, under phenomenological circumstances, that medium is an extension of space. In this text I would like to discuss what happens when subjects practice space across two different dimensions determined by the position of a video-camera recording their movements in the environment. Creating an image of that very space, this "gesture of video" (Flusser 2014) multiplies spatiality and manipulates temporality in interesting ways that range from real-time recording and screening to playback: if nowadays such elements are elaborated into a set of systems that overcome distance and delay, producing a feeling of presence while at a remote location, prior to the simultaneous form of visual communication that we term telepresence (Paulsen 2017), in the early days of video, that was not the case. The same very elements were affordances whose potentialities offered stimulating room for experiment to artists and technology pioneers. All in all, they pose questions of expansion and extension, doubling and (creative) interferences between the different spatio-temporal dimensions evoked, implicated, or simply visualised on screen.

This speaks of the long-lasting interest of experimenters and artists in reproducing presence and exploring the nature of spatiality. As a matter of facts, the relationship between space, the subjects situated therein and moving images are at the centre of complex dynamics, which have been thoroughly studied over time both in terms of practice-based research and in theory, yet it raised increased interest in the last twenty years or so: such an interest shall be seen as the synonym of a spatial turn in human and cultural geography (Thrift 2004; Massey 2005) which produced new paradigms of mobility and, in general, new understandings of space (Crilly 1999; Papastergiadis 2010). Moving images do not remain indifferent to this and concur to expressing these novel models. From Miwon Kwon's inquiry on site-specific art (2002) to Maeve Connolly's work around those artistic moving images that engage with place and location (2009), art and film theories follow up as a direct consequence, with critical redefinitions of notions such as space, place and location as dynamic concepts inextricably connected to identity and culture.

In what follows I would like to posit that the development of new kinds of spatial awareness is something that moving images both represent and favour, and that such awareness serves as a driver for R&D processes which will eventually lead to software and devices able to overcome distance and temporal mismatch in contemporary visual cultures and telepresence practices. The basis on which our current technologies are rooted can be retrieved in artistic moving images of the past. This is immediately apparent if we consider the flourishing

scholarship devoted to study how filmmakers think carefully about the ways to place their work within space, drawing attention to the strong linkage between text and context (Bruno 2018; Butler 2010; Casetti 2015; Fowler 2012; Hagener 2008; Rhodes and Gorfinkel 2011, are just a few key references amongst others). Be it conceived as a represented extension where figures navigate, or rather as a dispositif assembled according to a peculiar design enabling this representation to unfold, spatiality offers notwithstanding a medium *stricto senso* that moving images have proved to be able to explore with a variety of strategies.

One of them revolves around the construction of the diegetic space in a tight relationship with the extra-diegetic one: this poses the issue of what space is selected to be navigated within the frame, in comparison to what is deliberately left out, off-screen, outside the frame, and how the two remain intertwined along the development of the piece. This is particularly clear in experimental film and artistic moving images, where the narrative quality is not a stringent element and, conversely, the construction of the set becomes more easily and explicitly thematized as part of the artwork. Looking more specifically at video works from the 1970s, it is possible to retrieve a specific interest from the end of artists active during this period in the dynamics of construction of the space to eventually fill the screen. More specifically, these videoart works shall be seen as paradigmatic sites of expressive and disciplinary freedom,[1] where the artistic research on spatiality often results in the articulation of a set proper that does not *re-place* the physical context of the shooting, but rather demands to be arranged and disposed (albeit minimally) around the body and movements of the artist, or again, is evoked and imagined off-screen. These actions are "gestures of making" *à la* Flusser (2014a), in so far as they concretely take place in the area eventually corresponding to a space offered to be navigated by the spectators' eyes. It is a space made through the action of the artists' hands—arranging the camera, checking the limits of the framed set, disposing objects, props and—as we shall see—disposing one's body within it, too. Gestures, then, stand for a hand-mediated (or, by extension, full body-mediated) translation of thought. So Flusser (2014a, 32): "the words we use to describe this movement of our hands—take, grasp, get, hold, handle, bring forth, produce—have become abstract concepts, and we often forget that the meaning of these concepts was abstracted from the concrete movements of our hands. That lets us see to what extent our thinking is shaped by our hands."

Operating in the space, the movement across space may lead to a multiplication of its planar coordinates as the hands/bodies moving therein add further planes. The result is an extension as well as a stretch of the space features in

1 As all the chapters in this section do in a more or less explicit way, I echo Wanda Strauven's proposition regarding the role of the media artist in the context of the media archaeological approach, which I am myself applying. See De Rosa and Lazzari's introduction to section 1 for a thorough articulation of this point.

multiple directions; artists employ movements oriented both inwards, in the direction of a depth enhancement, and outwards, across the threshold of the frame limit. Whilst the former mechanism occurs on-screen, the latter clearly moves off-screen.

It is crucial to reflect upon the way this happens, considering at the same time how artists interrogate the movements performed in front of the camera and showing a trajectory across the on- and off-screen space. In the videoart works that I study, the speculation and inventive solutions that artists come up with as they question spatiality enabled a profound attention for video as a medium, as well as for the "technologies of the self" (Foucault 1988) that it develops. These are "symptomatic" (Elsaesser 2016) elements, which I suggest were entailed, explored and tested then for the first time, and at the same time notably represent marks eventually retrievable in our contemporary video-related practices. In order to illustrate such a founding value of that season of videoart, I selected two case studies that I suggest seeing as important points in the genealogy of current telepresence practices, broadly intended. Embracing a media archaeology method, these videoart pieces recontextualise visual artefacts—namely the mirror—and work as epiphany, turning point or rupture moments (Crary 1990), where artistic poetics merges with technological advancements, so as to crystallise new modes of configurating one's presence on screen. In effect, the space on screen itself is interrogated and critically explored thanks to a challenging use of the available tools, as well as via an alternative application of image canons. Such experimentations stretch the affordances of video as a medium, and at the same time test the grammar of the electronic image. This is exactly what happens in Joan Jonas' *Right side, left side* (1972), which I select to explore on-screen movements and to suggest that the navigation engaged by the artist can be considered as a quest for depth able to question the sole planary structure of the image as a two-dimension depiction. Instead, when it comes to the extension and expansion beyond the frame, I look at Lili Dujourie's mirror-themed works *Spiegel* (*Mirror*) and *Effen spiegel van een stille stroom* (*Smooth mirror of a still stream*, both 1976).

2. Looking for Depth: Joan Jonas Right Side, Left Side

> Dismantling the face is the same as breaking through the wall of the signifier and getting out of the black hole of subjectivity. Here, the program, the slogan, of schizoanalysis is: find your black holes and white walls, know them, know your faces; it is the only way you will be able to dismantle them and draw your lines of flight.
> (Deleuze and Guattari [1980] 2005, 188)

Left Side Right Side, is a single channel work belonging to Jonas' early period. It dates back to 1972: it is a moment of experimentation where the language of video and that of performance initially intermingle for documenting purposes but artists, Jonas not being an exception, soon realise that this technology can bring interesting affordances into the realm of possibility to explore both image and body in new ways.[2] Real time broadcasting initiates CCTV and video-surveillance but prior to that, playback technology offers more simply a double of oneself that proves to be perfectly suited to create dialogues, as well as counter-image effects. That is the case of this work, resulting from a capture of simple gestures performed by the artist for the camera, and constructed with the aid of a mirror. If the latter creates a split screen effect and at the same time a synchronic double of the artist's face, this is in turn further doubled up on screen thanks to the introduction of a monitor located in the bottom section of the frame, showing the live recording of the performance in real-time. On-screen, then, we see both Jonas' half face, its mirrored half, and the recomposed halves live-streamed on the afore-mentioned monitor, characterised by the obvious inversion of right and left caused by the capture itself.

Figure 1–2. Mirror and monitor compose the dispositif in *Left Side Right Side* (Joan Jonas, 1972). Stills from video.

This basic dispositif, assembled with a fixed camera filming a close-up of the artist's face, then slightly zooming out enough to include a blackboard backdrop and the monitor positioned in the left side corner, illustrate Jonas' explorative attitude towards on-screen space and videotape. It reminds in fact of Flusser's reflection regarding this medium as a tool: "video, as a tool, fascinates us. It permits us to discover potentialities unknown either to those who invented it or to those who paid for its production. And it permits us to steer its development in other directions." (Flusser 2014b, 145). That's probably what Jonas had in mind

2 For a review of these new ways, please see Lorenzo Lazzari's contribution to this volume, *At the Thresholds of the Medium: CCTV, Playback, and Feedback Breaking the Possibilities of Video*.

when in an interview commenting on her early video pieces she remarked—"I thought of the monitor as a box into which I could crawl" (MoMA, n.d.).

This very crawling, albeit not literal, stands for a form of navigation and exploration that moves from the presence of the artist's body, as well as of her actions and '*mise-in-abymed*' video image within the piece itself. Jonas indicates her right and left eyes, initially on her own body, secondly on the image of it, finally on both at once. In this gesture, she uses her body as the medium traversing the on-screen space and "explores the ambiguities caused by her attempt to identify correctly the spatial orientation of images simultaneously played back by a monitor and reflected in a mirror. This is confusing because, contrary to what one might expect, the monitor image gives back a 'true' reading of the space while the mirror reverses it" (Ross 1983, 131). Throughout the tape, the image switches back and forth between the "actual" artist's face and its double appearing on mirror and monitor.

The laterality of the image that is at the core of this work, its problematization and perhaps ultimate ironic treatment by the artist, shows the necessity to overcome the planary dimension of the frame and, consequently, the search for its deepening. Switching right and left or back and forth between video image and video-in-the-video image, highlights an intuition that many figurative artists had in the past, albeit addressed with different tools. As Andrea Pinotti observes in a reflection devoted to the "reverse of the image" in art via its left and right sides, "the right-left opposition does not exhaust the fundamental coordinates of an image: equally decisive are the top-bottom axis and (especially in images constructed in perspective or in any case with a sense of depth) the front-back axis" (Pinotti 2010, 16, my translation). Whilst he mainly has in mind graphics and painting, applying such a consideration to an art that implies the presence of a camera determining a front/on-screen and a back/off-screen dimensions seems particularly apt. We are not entirely sure whether Jonas had in mind the countless examples Pinotti mentions and the reflections that art historians such as Heinrich Wölfflin or Julius von Schlosser—also included in Pinotti's work—proposed on this topic, what is very clear, however, is that she has the potentiality of laterality and the space of the image as a field of tensions and as dynamic vectors very clear in mind. What she crafts is therefore a visual synthesis between image and its discourse.[3] Calling for one or the other side of the image, Jonas

3 Drawing a comparison to Pinotti's reflection again, I suggest Jonas deals with the "delicate relationship between image and discourse since, in verbally accounting for the sides of the image and its orientation in an ekphrastic description, complex dynamics of identity and point of view between producer, spectator and subject of the image itself come into play, dynamics that are decisive for a polarity, such as that of right-left, which is established in relation to a specific body and often takes on a deictic function" (2010, 56, my translation). I wish to thank the author for pointing me to this very useful reference, which seems to reinforce the argument I am sketching out.

tricks the spectator's eye intervening on the way in which videotape rolls—an aspect that she is clearly exploring at the time, as 1972 is also the year of *Vertical Roll* which is specifically devoted to this—and, in so doing, sets up the spatial and temporal coordinates of the piece as an altered double of reality. In effect, "with videotape playback and scene overlap. It, too, involves tricking the eye, but the tricks have other possibilities for manipulation that lie closer to the threshold of the scene's reality" (Flusser 2014b, 143). With these words, Flusser provides indeed a pretty accurate description of what's at stake in this work: the navigation across the frame operated by Jonas, both via her body and via its images played back by the monitor captured in turn, produces uncertainty between reality and representation, as well as a sense of displacement; watching the piece, our coordinates and orientation are in other words lost,[4] and the artist's gestures act as "lines of flight" (Deleuze and Guattari 2005, 55) deterritorializing and reterritorializing the on-screen space into a new configuration.

When Deleuze and Guattari propose the concept of lines of flight, which punctuates various sections of their *Mille Plateaus*, they mostly refer to territorialities, which they suggest feature "the presence within them of movements of deterritorialization and reterritorialization." Precisely these movements favour communication and exchange "at the intersection of the milieus" to the extent that space "would be nothing without these movements that deposit them" (Deleuze and Guattari 2005, 55).[5] Relating this to Jonas' piece, as right becomes left and vice versa, the swapping of sides in the artist's body speaks of multiplicity, and thus of the presence on-screen of swapping, reconfiguring movements that re-design the territory framed by the camera: Jonas forces what the philosophers would call a "single plane of consistency", that is, a consistent image inherent in itself and self-sufficient, able to introduce a trajectory that questions the "reality of a finite number of dimensions" and pushes the limits of her body and of its depiction. If we read this trajectory as a line of flight, as I am suggesting, then, this is endowed with an ability of "deterritorialization according to which [territories] change in nature and connect with other multiplicities" (Deleuze and Guattari 2005, 10). When right becomes left and vice versa, then, the lines of flight crisscrossing the screen produce the swapping of sides in the artist's body that we are discussing. Such a displacement illustrates rather neatly the multiplicity Deleuze and Guattari mention: Jonas' body appears in several places at once, inhabiting the on-screen space in a room of

4 Vilém Flusser goes farther and significantly couples the video image and image reflected on the mirror: "videotape is a dialogical memory. At first glance, the monitor seems to be a mirror, but many differences can be established between it and a 'classical' mirror […]. For in its sound, angle of reflection, light, it reverses all our traditional concepts of a reflected, speculative reality. It puts the person watching the monitor in a space for which there are no coordinates, he loses orientation" (2014b, 144).

5 All the above quotations are from Deleuze and Guattari (2005, 55).

performance, but also in the monitor placed in the left-hand side of the screen, which adds an element of both strong fictionality to the ensemble and of depth to the image.

The relationship between their concept and depth is something explicitly addressed in *Mille Plateaus* when the authors critically engage with painting and perspective: "Lines of flight as perspective lines, far from being made to represent depth, themselves invent the possibility of such a representation, which occupies them only for an instant, at a given moment. Perspective, and even depth, are the reterritorialization of lines of flight, which alone created painting by carrying it farther. What is called central perspective in particular plunged the multiplicity of escapes and the dynamism of lines into a punctual black hole" (Deleuze and Guattari 2005, 298).

By operating via lines of flight, I don't think Jonas escapes dynamism at all, she rather embraces it. She is keen on offering a representation of multiplicity, and actually her performance is scripted as though her aim would not quite be depicting the possibilities of her body in and of itself, but making sense of it and of the reality which both envelops it and that it inhabits. This is enhanced by the image of the body topping up its physical original via the use of video. The whole process seems to find an interesting confirmation in Flusser's predicament regarding the genealogy of video: "Genealogically, […] video can be traced back to the line water surface-magnifying glass-microscope-telescope. […] the origin of the tool 'video' gives the impression of a whole series of epistemological virtualities that have not yet unfolded" (2014b, 145). To this genealogy starting with water I suggest adding the mirror, which not only we see in use in *Right Side, Left Side* to open up space for a virtual self but is notably connected to it by the myth of Narcissus. Playing with the mirror, Jonas looks for an extra, further space to see herself acting, perhaps, to simply be-in-the world. In effect, since ancient times, i.e. Greco-Roman culture, the key principle has been to take care of one self and—as Foucault reminds—"knowledge of oneself appeared as the consequence of taking care of [one-]self" (1988, 22); in this frame, only eventually inverted in modern times, the mirror represents the means allowing to "shift the question from 'What is this self?' to 'What is the plateau on which I shall find my identity?'" (Foucault 1988, 25). Such a passage is based on the understanding that "we are dealing with a gesture whose coming can be read as a new way of being-in-the-world" (Flusser 2014b, 146), that is to say, the plateau where we can find Jonas' identity is her mirror double and her video image. Yet the former is not just a prerogative of the videoart piece we are discussing, because it is mentioned in Foucault's analysis, too. As a matter of facts, he suggests that "[t]he care of the self is the care of the activity and not the care of the soul-as-substance," so to take care of the principle of this activity that philosophers indicate being the soul, "[o]ne must know of what the soul consists [and the latter] cannot know itself except by looking at itself in a similar element, a mirror" (Foucault 1988, 25). Such a reflexive posture is what

Jonas expresses in her artwork, a video piece where the optical device is employed and where the medium is also used as such. Along this line of thought it is impossible not to think of Rosalind Krauss' famous reflection on video as a medium centred on an "aesthetics of narcissism" (1976), circling back and strengthening the consistency of the genealogy we are retracing.[6]

Moving across such a genealogy, the exploration of the self unfolds by means of the navigation of the space both on- and off-screen, interrogating them. The possibility to gain knowledge about how to inhabit this two-fold spatiality becomes a way to achieve a better understanding of oneself via the work of one's image that enables a care-taking gesture. Precisely this image opens the realm of representation and virtuality, going through the depths of the image thanks to the opportunities provided by real time recording and playback. Jonas is not the sole artist exploring these elements: just a few years later, Lili Dujourie picks up the exploration of the mirrored image that we saw in *Right Side, Left Side*, reflecting more thoroughly on her reverberated counter-image and on how this may explode the on-screen space as a surface, in ways that challenge the boundaries of the frame.

3. Forcing the Boundaries of the Frame: Lili Dujourie's Mirrors and the Quest for Space Extension

> We must invent our lines of flight, if we are able, and the only way we can invent them is by effectively drawing them, in our lives. Aren't lines of flight the most difficult of all? Certain groups or people have none and never will. Certain groups or people lack a given kind of line, or have lost it.
>
> (Deleuze and Guattari [1980] 2005, 202)

6 Many are the studies devoted to the mirror and its role in the construction of identity and the image alike, that are significant to compile this genealogy. Crucially, however, due to length constraints, in this text I will deliberately touch upon the contributions that offer a relevant input for the purpose of this essay. This inevitably leaves out important references feeding a very rich list, including significant studies such as: Anderson, Miranda (ed.). 2007. *He Book of the Mirror: An Interdisciplinary Collection Exploring the Cultural Story of the Mirror*. Cambridge Scholars; De Clercq, Rafael. 2007. "A Note on the Aesthetics of Mirror Reversal." *Philosophical Studies* 132 (3): 553–63.; Eco, Umberto. 1985. *Sugli specchi e altri saggi*. Bompiani; Heyne, Pamela. 1996. *Mirror by Design: Using Reflections to Transform Space*. Wiley; Hornbacher, Sara, ed. 1985. "Video: The Reflexive Medium." *Art Journal*, Fall.; Lacan, Jacques. 1988. *Book 1: Freud's Papers on Technique 1953–1954*. Cambridge University Press; Leuzzi, Laura. 2020. "Self/Portraits: The Mirror, the Self and the Other. Identity and Representation in Early Women's Video Art in Europe." In *EWVA European Women's Video Art in the 70s and 80s*, edited by Laura Leuzzi, Elizabeth Shemilt, and Susan Partridge. John Libbey Publishing; Melchior-Bonnet, Sabine. 2001. *The Mirror: A History*. Routledge; Tagliapietra, Andrea. 2008. *La metafora dello specchio. Lineamenti per una storia simbolica*. Bollati Boringhieri; Valentini, Valentina, ed. 1998. *Allo specchio*. Lithos.

In 1976, Belgian artist and filmmaker Lili Dujourie produces two pieces, both revolving around the central presence of a mirror element. *Spiegel* (Mirror), and *Effen spiegel van een stille stroom* (Smooth Mirror of a Still Stream) are set indoor, the presence of the artist catalysing the scene, her subtle movement traversing it as she navigates the diegetic space either through simple gestures or just by filling the frame with her body, still. My argument is that both these pensive movements and simple gestures are a way to navigate the frame but mostly that they trigger a navigation that takes the eyes of the spectators beyond the limits of the frame itself, along a line of flight heading off-screen.

Figure 3–6. *Spiegel* (Lili Dujourie, 1976). Stills from video.
Courtesy Argos – Centre for Audiovisual Art.

In *Spiegel*, the scene is cut by the central position of a mirror, whose surface shows the corner of a fireplace and mantelpiece. The latter soon becomes the backdrop where a naked woman leans: her reflection shows her full body, still, the hair combed, her legs and back in plain sight, her head resting on her arms resulting in a pose reminiscent of classical sculpture. However, suddenly she turns face to the camera, moving towards it (and us watching): her body leaves the statuary pose to walk past the camera and "a close-up of her breasts obliterates the illusion of the idealised image in the mirror. […] Finally she abandons her formality; she loosens her hair and paces almost aimlessly around the space" (Fisher 2002, 99).

Figure 7–8. *Effen spiegel van een stille stroom* (Lili Dujourie, 1976). Stills from video. Courtesy Argos – Centre for Audiovisual Art.

In *Effen spiegel van een stille stroom*, the scene is constructed with a number of similarities—the minimal setup, a fireplace with mantelpiece, the reflecting system—however the mirror is placed across the right edge of the frame and both the composition of the image and the scale of the woman make it unnoticed at first. Only when these elements are processed by us spectators, and in particular when the motion of the woman standing on the right starts, we realise that the dispositif of the piece is created so that the on-screen space is in fact fractured along the vertical axis in correspondence of the mirror threshold, and features a clear contrast created by multiple planes, as well as by the interplay between spaces, depths and surfaces. As the woman exits the frame disappearing from our visual field we become finally aware of this very disposition: the space in front of and behind the camera are swapped and merged on screen thanks to the presence of the mirror that re-presentifies the author via her reflected image, until her 'real' body' enters the frame from the opposite side and makes more perceptible the distorted perspective we had tried to familiarise up till that moment. At that point, all of this unfolding very seamlessly and quickly, Dujourie's body fills the screen and stands in front of the camera at a very close distance: as the space before her, the artist's body also appears in close-ups, cut in pieces by the frame and leaving the parts that are not given us to see only alluded, imagined. "[A]s in *Spiegel*, we only see the whole, 'idealised' figure in the mirror; and again, the game of posing formally for the camera is abandoned to informality: sitting, smoking, waiting. […] The mirror opens up the space to what is behind the camera" (Fisher 2002, 100). The focus, then is shifted from the frame to what transcends it: there is a world at its borders and escaping them, Dujourie expands the surface of the practicable space beyond the image, off-screen. The issue is not quite to see what's precluded to the eyes of the spectators but rather offering an extension for the possibility of action and experience regardless of their visible representation; in the artist's words: "I want to indicate the duplicity (visible/invisible, present/absent) in its totality and make it experienceable" (Dujourie cit. in Fisher 2002, 99).

Reflecting upon these terms—visible/invisible, present/absent—Dujourie examines the categories that will eventually be at the centre of contemporary telepresence. Her way of processing them, though, is more expressive than functional and pragmatic. It dwells on the off-screen space, and endows it with a key role, not a void, not the site of absence but that of freedom and, simply, of experience disjointed from display. This very space, far from being negative, is thought of as part of a dispositif that assembles it with the body of the artist and the qualities of video—real time image, instant playback, performativity, a partial image (we only see parts of the artist's body) that exudes intimacy. This is achieved thanks to the recorded mirror, which concurs to make apparent the action of a line of flight that crosscuts the on-screen space in the direction of the invisible dimension located outside our field of vision.

In *Spiegel*, as critic Jean Fisher has observed, when the artist walks past the camera, we realise that what we've been viewing up to that moment is a mirrored image, a sort of counter-image differing from the simple capture of Dujourie's body, a "sudden eruption of the particular [occurs] in a further encroachment of the 'outside' of the frame on the 'inside'" (Id.). In *Effen spiegel* the same permeability of inside/outside dimensions, on-/off-screen, is apparent when the body of the artist longs for and eventually reaches a position behind the camera, thus unveiling "a staging of an imaginary ideal that shatters with the intrusion of a 'real' that never coincides with it" (Id., 100). Dujourie follows a line of light that perhaps is evoked by the "still stream" of the title: she flows and flees off-screen, deterritorializing the set-up she constructed as much as a sense of displacement arises the moment she confronts her own reflection in the mirror. To bear that image, more space is needed, new ways of conceiving the image of oneself are needed, a further dimension as compared to the two-dimensionality of the image is needed. So the planes of the image multiply—bare floors and walls leave room to a door that opens over further depths, windows and mirror reflect a room that remains vague and lends itself to design new extensions, allowing for a nearly three-dimensional effect to shape up, and for further space to unfold. It is this complex multilayered space that gives to the artist a chance to freely navigate the world, thereby echoing the space inhabited by the spectators.

The deterritorialization and reterritorialization made possible by such navigation are favored by the nature of the set prepared by the artist: knowingly, this is thought of as the room to foreground a passage between an inside and an outside, it is "articulated by a play of limits, intervals or interfaces, whose thrust is towards the possibility of the [off-frame], towards a kind of blind seeing of what is immanent to yet occluded from the visual field" (Fisher 2002, 101-2) and towards which the body of the artists inevitably heads to. In this sense, Dujourie's complex spatial dynamics not only emphasize the off-frame dimension, where the lines of flight that she develops are directed, but the

sophisticated topology of implied off-screen space that they produce contribute to create a peculiar deictic quality.

According to Catherine Fowler (2008), the attention paid to the off-frame comes with a stress on the virtual or fictional space implied beyond the frame and directs the viewer's attention to a projective elsewhere. In Alison Butler's view, instead, this process can be described in terms of spatial dislocation and is often chained to temporal disjunction, too; because of this intertwining of spatial and temporal coordinates, the dialectic between visibility/invisibility and presence/absence evoked by Dujourie herself is intensified and according to Butler (2010) this may be analyzed via the notion of 'deixis.' More than from semiotic, where the category was formalized, she mainly refers to its application in theatre theory,

> where it is used to specify the effect of presence and its discursive actualisation. Theorists of theatre have defined presence not just in terms of the performance of an actor or the attendance of an audience, but in terms of the "continual present of the stage and its enunciation." [This means that] theatre spectators consciously and unconsciously negotiate shifting and contradictory ways of locating the performance in space and time and continuous modulation of their own presence to and absence from the performance. (Butler 2019, 13-4)

If in performance art deixis is then activated as a strategy to actualise what happens on stage within an actual and situated environment experienced by actors and public alike, in film the disjunction determined by the recorded nature of images introduces a fracture. When moving images are installed in the gallery space and when media such as video elaborate around the threshold between the recorded/diegetic/on-screen dimension of the characters and the live/extradiegetic/off-screen dimension experienced by spectators, however, these two spaces end up implicating each other. The result is a negotiation of the two dimensions, a mutual allusion one to the other and a critical interrogation of the separation between them.

4. On Deixis—Or, Joining On- And Off-Screen Spaces Following the Lines of Flight

To describe the videoart works I am analyzing as "deictic" in the theatrical sense suggested by Butler, means to acknowledge and appreciate the lines of flight crossing the on-screen space in direction of the off-screen space. Linking these two faces of spatiality means to recognise the articulated spatial nature of the diegesis, as well as spectatorship as a situated experience that shall not be thought of in an abstract way, but rather as one rooted in a spatial dimension that may well be inhabited by the viewers precisely thanks to the viewing. A

synthesis between the two may be complex, yet the artistic solutions proposed by authors such as Joan Jonas and Lili Dujourie point at the meaningfulness of their intersection or, at least, their imagined exchanges across representation and life, image and flesh, distance and presence, delay and simultaneity. Deixis serves as a sort of "tuning strategy" between these opposite poles, whose solution will only be produced years after, to respond to practical needs, via telepresence apps and softwares. The videoart works discussed in this text, however, pick up the inheritance of previous figurative art and reinterpret it, offering both initial questions that sparked subsequent research and creative modulations between the binaries listed above. As much as artists have addressed the laterality of images through a set of figurative strategies "expressing the need not to produce disjunctions" (Pinotti 2019, 19, my translation) between left and right, before and behind, so do the works I am discussing, relaunching and rephrasing the questions at stake "making connections" (Lury, Massey 1999) through the language of video.

Adopting the lens of deixis to look at the selected case studies, we gain a useful toolkit to interpret Jonas' and Dujourie's works but mostly to address —bearing these pieces well in mind— the connection between "*screen space* and *screening space*" (Butler 2019, 14). Contemporary telepresence tries to blur these dimensions, joining them in an attempt to shorten distances, extend and make space more comprehensive so that it can somehow include our presence even when this is phenomenologically impossible. There is however yet a further small conceptual passage dealing with the audiovisual formats videoart is encapsulated in today that I would like to offer for consideration: the discussed artworks not only illustrate quite emblematically the "deictic turn" in moving images theorized by Alison Butler (2010), but on the basis of that, they prefigure today's practices of moving image installation. Arguably one of the most widespread forms we can encounter moving images today, moving image installations pair with the apparently very far—yet equally familiar—telepresence and short video formats populating our contemporary networks. Both media configurations raise important questions around the relationship between distance and proximity, the blurring boundary between diegetic and extra-diegetic aspects, delayed image of the self and synchronic, real time presence. Considering the spatial element informing and somewhat determining these features, the sensitivity for space may be a key element in addressing our position in the world at a moment when moving images installations permeate a significant part of our environment making it a media-environment. In the same wake, the telepresence systems overcome distance and delay but may not provide all the answers to navigate our relationships with others, to position ourselves in the world, to fill the gap separating from others, to make ourselves feel attuned despite producing the sensation of presence through mediated environments and networked devices (Paulsen 2017).

In effect, the notion of lines of flight that I have employed to build my argument also sits on a predicament of action which closely reminds that gesture of self-reflexive awareness mentioned by Foucault. As he intends the latter in terms of a "concern for self [that] always refers to an active state" (1988, 24), so Deleuze and Guattari describe their notion: "[t]here is nothing imaginary, nothing symbolic, about a line of flight. There is nothing more active than a line of flight" (2005, 204). This very activity is propelled to attend to a mechanism born out of desire,[7] of which the artworks I discussed are a possible crystallization. If we were to retrieve similar mechanisms of desire today, we circle back to moving image installations and short digital video formats, where a certain emphasis to what remains beyond the camera and exceeds the frame, as well as a certain urge to place one's body in front of the camera, surely represent very recurring tropes.

In a genealogical fashion, as much as video entered the scenario in the Seventies representing a new tool, so today's moving image installations and short networked video-formats revolving around the body and the presence of the videomaker can be seen as new tools "conceal[ing] unknown virtualities within [themselves] and […] permit[ting] acts of emancipation" (Flusser 2014b, 143). Precisely the potentiality of a virtuality and the chance for emancipation are perhaps the features that thrust artists, and more in general today's screen media users, to force the limits of the frame, navigate the on-screen space in a way that disseminates it of lines of flight eventually implicating an off-screen dimension, which shall be reached and constructed through processes of deterritorialization. Via Jonas and Dujourie's works we may observe that as much as loops, real time and playback have entered the standard vocabulary of a visual grammar proposed to and used by millions of people every day in contemporary audiovisual formats, so the overall fascination once retained by videoart endows its democratized and non-artistic legacy. Such a heritage lively circulates across our networked visual cultures in multiple guises, all providing a strategy to navigating the utterly widespread displacement, with the promise of an individualized virtuality able to trigger processes avoiding disjunction, enhancing a sense presence, closeness and possibly favoring emancipation.

7 So Deleuze and Guattari in this regard: "Our only points of disagreement with Foucault are the following: (1) to us the assemblages seem fundamentally to be *assemblages not of power but of desire* (desire is always assembled), and power seems to be a stratified dimension of the assemblage; (2) the diagram and abstract machine have *lines of flight that are* […] *cutting edges of creation and deterritorialization*" (2005, 530–31, italics mine).

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Speculative Materializations in Erika Tan's *Barang Barang: Spectral Entanglements* (2021)

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Abstract

Erika Tan's double screen video work Barang Barang: Spectral Entanglements (2021) imagines an impossible meeting between four women artists: Georgette Chen, Dora Gordine, Kim Lim and Fay Tan. Enabled by video technology, these four figures traverse the span of time and space, and lives lived across continents and in different epochs, to share their stories of creative feminist endeavour. Tan's film, like many of her media installations, stages a speculative space to ask far reaching questions on the gaps and ellipses of the colonial archive. The Malay term "barang barang," variously defined as "stuff," "bric-a brac," "freight" describes the convergence and circulation of objects that are in transit, unsorted and outmoded. This term could equally describe the lost and fading images and apparatus of the media archive, and the ways in which they might find new lives in a speculative fiction.

Keywords: "Barang barang;" Erika Tan; Georgette Chen; Dora Gordine; Kim Lim; Fay Tan; Archive; Presence; Media Archaeology; Temporal Drag

Abstract

L'opera video a due canali di Erika Tan, *Barang Barang: Spectral Entanglements* (2021), immagina un incontro impossibile tra quattro artiste: Georgette Chen, Dora Gordine, Kim Lim e Fay Tan. Grazie alla tecnologia video, queste quattro figure attraversano il tempo e lo spazio, e le vite vissute attraverso continenti ed epoche diverse, per condividere le loro storie di impegno creativo femminista. Il film di Tan, come molte delle sue installazioni multimediali, mette in scena uno spazio speculativo per porre domande di vasta portata sulle lacune e le ellissi dell'archivio coloniale. Il termine malese "barang barang", variamente definito come "roba", "cianfrusaglie", "merci", descrive la convergenza e la circolazione di oggetti in transito, non ordinati e obsoleti. Questo termine potrebbe anche descrivere le immagini e gli apparati perduti e in via di estinzione

dell'archivio mediatico, e i modi in cui potrebbero trovare nuova vita in una narrativa speculativa.

Parole chiave: "Barang barang"; Erika Tan; Georgette Chen; Dora Gordine; Kim Lim; Fay Tan; Archivio; Presenza; Archeologia dei media; Trascinamento temporale

1. Introduction

Entering Erika Tan's exhibition *Barang Barang* at the Stanley Picker gallery in Kingston, south-west London, I am in a narrow passageway between gridded walls of metal shelving, on which are amassed an array of miscellaneous objects and receptacles. Neatly stacked varnished wooden boxes, plaster casts, bubble wrapped pictures and labelled VHS tapes don't give much away about the purpose and provenance of these archived objects: wrapped, packed and inert (Fig. 1). But whilst these assorted containers withhold information about what lies inside, a passage of time is eloquently described across their surfaces. Date stamped and scuff-edged boxes evoke decades of wear and histories of changing innovations in packaging: from wood to plastic. Eschewing chronological arrangement, the objects in *Barang Barang* also follow no discernible temporal ordering, so that the distinctive yellow of Kodak slide sleeves from the recent past sit alongside the sculptural heads and packing cases of an earlier epoch.

Also suggestive in the scratches and dents, or the Chinese script on the side of some of the containers, is the past in motion, as these now becalmed objects whisper of circulations across cultures and continents. The term "barang barang," as Wendy Teo explains in her exhibition essay, refers to the material detritus often left behind, or carried along in these currents: "commonly used to describe haphazard agglomerations of "stuff." For instance, the clutter of bric-a-brac one might encounter and patiently sift through in a flea market" (Teo 2022). Tan takes this vernacular understanding of the term further, probing its etymology and cultural and linguistic emphases, to release other potent meanings. "'Stuff' or 'belongings' in Malay, also meaning freight. Khemer means 'French.' In Thai, a similar sounding 'farang' is used for 'stranger' or 'foreigner,' 'white person,' but also used to describe things that are imported. Filipino, Cebuano Language, it means 'mythology' and 'magic' or 'malignant sorcery'" (Tan 2024).

The definitions she finds extend beyond exchanges in the trading of goods to encompass its human interactions and circulations. I think, for example, of how the word "belongings" identifies to a place or a people, as well to the ownership of things. Tan's attention to these lexical shifts and transformations reflects her enduring scrutiny of the archive, and the critical address that she makes through her films and installations to its spectacularization of the colonial subject in museum and exhibition display. As she has discussed, in relation to a previous three screen film *Persistent Visions* (2005), made in response to the

moving image collection of the British Empire and Commonwealth Museum in Bristol:

> It is this "gap," created by the "death" of significant connections, which I find of interest. The "gap" becomes a contested space, one I am interested in propping open, maintaining the breach; not only through an irreverence to the principles of *respect des fonds* (and by implication the original creators of the material I am sourcing), but through emphasizing the role of interpretation and the role of the viewer in relationship to the concept of the archive's value and significance… For me the activity of "dis"-respecting the original order gives the archive possibilities of new changing and alternative purchases on "truth." (Tan 2006, 70)

I am reminded of this objective to "(dis)respect," as I encounter the archival melange of objects in the gallery at *Barang Barang*, where Tan's destabilisation of chronological ordering draws to the surface new dialogues and insights through unexpected juxtapositions.

However, it's important to stress the affective dimension particular to *Barang Barang*, in contrast to her earlier works on the archive such as *Persistent Visions*. For the *Wunderkammer* of objects which I peruse is an intensely personal archive, comprising of her own creative back catalogue and that of her mother: also an artist until her death in 2005. Thus, the question of how to "(dis)respect" the archive is given a further emotive charge when extended to the creative provenances of a mother and daughter, who are also implicated in cross-cultural and cross-country circulations between homes in Singapore and London. And here, chronology is entangled with familial memory and coloured by an archival custodianship always partial and subjective. What to do with all this stuff?

> I have been slowly burning my mother's art works to much consternation from curators, artists, and people outside my direct family. The process is seen as destructive, reducing of value and lacking in respect. Limited by the lack of space and financial means to archive the work properly and lacking an institutional "home" for this work (much produced in Singapore), my ambition has been to find a transformative or transgressive process by which the work can take on new significance or resonance. (Tan 2024)

Just as she turns over the word "barang barang" to find alternate derivations, so Tan challenges the connotation of destruction attached to the action of burning, making the case for fire's significance in Asian cultures as a ritual of cleansing and preparation for the next life. She asserts that: "Burning, as with Chinese funerary rituals, can also be seen as a form of release and support for a new life. Within art practices, the notion of appropriation, re-use and the afterlife come to mind. Alongside burning my mother's work, I have also been burning my own" (Tan 2024). A nod to her own part in this alternative model of archive practice is embedded amongst the shelves at *Barang Barang*, where a

small monitor plays a video of burning tea chests which had once formed part of Tan's 1998- 2001 installation, *From China to Chintz*.[1] This might be understood as a form of archival cataloguing, entered not in a ledger but made anew, and recirculated in dematerialized form, as video performance.

Figure 1. *Barang Barang* (Erika Tan, 2021). Exhibition entrance showing archival display, Stanley Picker Gallery, Kingston University, 17 February–9 April, 2022. Courtesy of the artist and Stanley Picker Gallery.

It is, as I shall discuss, a strategy that she brings to the cataloguing of Fay Tan's work too. Intergenerational rather than chronological, Erika Tan honours her mother's creative estate, but without detaching it from the complicated provenance of her own identification as fellow artist but also daughter. By inhabiting her mother's "barang barang" through her own creative interventions, often calling on feminist historiographies and reimaginings, she opens up the archive's potential to be a tangible, and unfixed entity, responsive to the visitor's contemporary encounter. As part of this process, the moving image operates across multiple registers in *Barang Barang*: as a recording device, a tool for speculative framing, as well as an archival object itself (those neatly stacked VHS cassettes).

1 For further details of *From China to Chintz* see: https://www.erikatan.net/east-chintz-from-china-to-chintz. Accessed July 1, 2025.

Tan's affective archiving processes resonate across different epistemologies and their associated modes of media analysis, whether archival, ethnographic, archaeological or museological. Speaking from the perspective of media archaeology, Vivan Sobchack reflects on the significance of *presence*, and how the overlooked media fragment might elicit "intense awareness," of a sensate past simultaneously irretrievable, but also always spectrally present in the everyday.

> […] at both ends of the discourse of presence—real, if partial, presence or illusory presence effect, existential encounter or its posthumous aftershock—the previous overlooked and unthought metonymic fragment or trace provokes intense awareness not only of an irrecoverable larger absence (conceived as "the past") but also of an existentially present "otherness" (recognised as a difference located in, yet distinguishable and distant from, the order of things that constitutes the everyday world we live intimately as "the present"). (Sobchack 2011, 326)

Sobchack's insights evoke for me Walter Benjamin's famous historical materialist revelation of a past triggered by an image or object, that "can be seized only as an image which flashes up at the instant when it can be recognized and is never seen again" (Benjamin 1968, 255). The elusive—yet visceral—charge which both Sobchack and Benjamin intuit, as the object momentarily throws the patterns of the past into relief, is deeply at work throughout *Barang Barang,* surfacing in a number of different registers and provocations.

At first encounter, the passageway of neatly shelved objects gestures towards the immutable permanence embodied by the archive, where objects might survive intact and undisturbed on its catalogued shelves. Yet *Barang Barang*'s artfully lit display of disparate objects also resemble the props of cinematic *mise en scene,* so that its paint pots, plaster casts and video tapes might perhaps have been recently constructed as scene setting, prior to the appearance of fictional protagonists. Operating in an ambiguous space between fact and fabrication, *Barang Barang*'s disparate shelves of unnamed objects undermine any authoritative claim of timeless capture where, as Derrida has noted, "social order are exercised, in this place from which order is given" (Derrida 1996, 1). But for Tan this installation is not simply a mode of archival critique. Its allusions to staging and illusion foreground strategies that she explores in two key works also exhibited in *Barang Barang*: the video monitor installation *Pouring Milk (I)* and *(II)* (1990s/2021), which could be seen as co-authored with Fay Tan, and the two screen film *Barang Barang: Spectral Entanglements* (2022). In both cases the temporal and spatial fluidities of the moving image offer Tan a potent archiving tool, with the ability to trace impossible meetings across history and continents. Drawing to the fore the etymologic roots of "barang barang" in "magic" or "malignant sorcery" (Tan 2024), the spectral manifestations she conjures on-screen—as I will discuss—could be considered a speculative mode of making present, which might loosen the binds of the archive, and the colonial canons it continues to uphold.

2. Analogue Re-enactment

In the low-fi temporalities of analogue video Tan finds a generative tool for a close-grained study of her mother's creative process, where the operations of rewind and replay are reflected back through her own performative mimesis. Echoing the small screens which already flicker amongst the shelved objects in the exhibition's opening corridor, two monitors vertically stacked both depict a simple action akin to the task-like performances of video artists from the 1970s such as Joan Jonas or Martha Rosler. In an image of quiet minimalism, a figure in black pours milk from a white jug into a stack of white bowls, which rests on the curved edge of a marble table against a white wall (Fig. 2). The duration of the video is determined by the careful filling of each bowl which is then placed in a semi-circle with the jug. The two soundless videos, which both loop the performance of lifting and pouring until the bowls on the table are laid out full—before the process starts again—create an uncanny mirroring, not quite in sync. It becomes apparent that one is a performance to video-camera made in the 1990s by Fay Tan, which she produced whilst studying at Goldsmiths College of Art, on her return to London from Singapore. The other—using the same table, jug and bowls—is a recent re-enactment by Erika Tan which seeks to copy as exactly as possible her mother's earlier piece.

Figure 2. *Pouring Milk (I) and Pouring Milk (II)* (Fay Tan / Erika Tan, 1990s/2021). Single channel videos. Courtesy of the artist and Stanley Picker Gallery.

Tan's mimesis in *Pouring Milk (II)* (2021) creates an intimate choreography in dialogue with her mother's past performance. Writing in the context of historical re-enactment culture, Katherine Johnson touches on how, for its hobbyists, modes of re-enactment can be a connection to a past which they had not inhabited: "Re-enactors have described intense moments of felt historical connection—moments when they feel almost as if they were in the past or as if they really were, for a moment, the historically-inspired persona they perform" (Johnson 2019, 171). But these re-enactors seek to embody historic figures

separated from them not only by the distant past but through the characteristics gleaned from historic record rather than personal knowledge. By tracing her mother's performancing body through her own, and by placing her new recording next to Fay Tan's original tape, Erika Tan joins in the same temporality of repeated gestures. Looping together on adjacent screens, at times their movements are almost in sync before losing register, to find it again, in a moving dance to reach each other across disparate time signatures.

By choosing to re-enact Fay Tan's video performance, Tan also acknowledges her mother for her status as a fellow artist, whose singular creativity—outside the bounds of her maternal role—she was still discovering as she sorted through her estate. Furthermore, the re-enactment of conceptual art and video practices of the 1960s and 1970s, with which *Pouring Milk (I)* shares its minimalist characteristics, have since emerged during the 2000s as a field of art practice in itself. For Sven Lütticken, a key exponent of this millennial phenomenon,[2] performative revisitation offered a means of "notation and mediation" (Lütticken 2022, 8) in order to access the authenticity of the original but from a different cultural context. Speaking critically of "re-imaginings" of Allan Kaprow's environments and happenings during a retrospective between 2006–08, Lütticken attributes the "normalized, bureaucratic versions" that emerged as in fact "an apt actualization, as it foregrounds the effects of institutionalization and the need to come to terms with the work under vastly different circumstances—situating it between then and now […]" (Lütticken 2022, 9). In *Pouring Milk (II)* this appropriative model of re-enactment becomes less about assimilation than reconciliation across time, where the "then and now" meet in the looping replayed present of the double video work.

As a phenomenon which emerged to historicize art works resistant to archival conventions, being predicated on their ephemerality as performance and happenings, modes of restaging become—like *Pouring Milk (II)*—a way of getting closer to the processual properties of a performed work, including through the uneven documentation that might sometimes exist of its original iteration. As Lütticken observes, "If critics and scholars once treated the "actual" performance as a privileged event and relegated all mediations to secondary status, the process of mediation has now come to be seen as an integral element of performative practice. Oral and written accounts, film, and video are no longer seen as derivatives of the "real" artwork but provide access to it even while (re) shaping it" (Lütticken 2022, 10). This may be, as he infers, to account for the afterlives of what are now perceived as seminal art works of the last century. I would also add that we could detect in re-enactments by scholars, curators and artists alike a salvage impulse that might be recognized by anthropologists,

2 Lütticken was responsible for the seminal exhibition and associated catalogue (Lütticken 2005).

ethnographers and archaeologists. By committing them to record, cultural traces at risk of disappearance can be saved and their loss mitigated. Despite the problematic elements of salvage anthropology raised by James Clifford and others[3], the salvage impulse echoes in Tan's earlier comments on the search for a transformative or transgressive means of archiving her mother's estate.

But in lieu of preservation Tan chooses re-presentation. Her approach differs from the reprisals of historical performance works discussed by Lütticken in two ways. Firstly, the two-screen video work asserts an intergenerational dialogue which does not privilege one work over another. Erika Tan's mirroring gestures are set up in wordless, rhythmic adjacence to Fay's performance, instead of the former coming to stand in for the latter. As a response to Fay's original performance *Pouring Milk (II)* neither subsumes it into a new work, nor stands in obeisance. Joined in equal, rhythmic syncopation, mother and daughter occupy the same performative present, across the timespan of some thirty years.

Secondly, the ability afforded by analogue video replay to leap this temporal chasm is marked in a temporal rhythm quite different from the more advanced digital moving image in which Erika Tan records her re-enactment. But whilst the operations of circular looping, record, copy, replay and erasure available to 1990s video technology may now seem limited, in the context of the *Pouring Milk*… double installation they emit a rich and multi-layered manifestation of time, with profound metaphorical implications. The textural patina of degrading tape can be traced in the fuzzy edges of de-lacing image as Fay Tan lifts her jug. Likewise a slight halo of light behind her, and the loss of detail in her fingers on the handle, suggest an entropy of the image which reflects the fading presence of Fay herself. Sobchack understands this ability for the material present of media technology to transcend notation when she notes that, "Presence, then, emerges not at the level of narrative and meaning but in meticulous *description*, which is, as potentially endless, always metonymically partial and open—and prior to the summary comprehension accomplished first by name and then by interpretation" (Sobchack 2011, 326). Spoken not in words but through the static on the looping tape, this sense of loss in *Pouring Milk* is movingly transmitted.

It is also important to remind the reader that *Pouring Milk (II)* refuses the reproductive properties so characteristic of media technology, in favor of a poor copy made through human performance. Rather than deciding to digitally preserve her mother's video performance to camera as a means of archival safeguarding, Tan has chosen instead to re-record (re-master?) it through her own inexact and painstaking bodily repetitions. In this regard she has become a video copy herself, but one which goes beyond technological mimesis to a deeper,

3 For a delineation of this methodology and the arguments raised around it see (Clifford 1989, 73–78).

affective mode of embodiment. In his study of "bodily practices" the social anthropologist Paul Connerton delineates performative acts as "mnemonic systems." As he explains: "Many forms of habitual skilled remembering illustrate a keeping of the past in mind that, without ever adverting to its historical origin, nevertheless re-enacts the past in our present conduct. In habitual memory the past is, as it were, sedimented in the body" (Connerton 1989, 73). Connerton extrapolates this "past in the present" through three distinct but connected bodily practices, which are worth delineating here for the insight they offer into the interplay of bodies—human and technological—in the conjoined videos of *Pouring Milk*….

Connerton conceives of practices of "inscription," where a performance is used to facilitate "modern devices for storing and retrieving information" such as writing or speaking. In contrast, "commemorative" and "incorporating practices" involve the body in forms of remembering at different degrees of awareness. Connerton's concept of "commemorative ceremonies" introduces the notion of codes of behaviour modelled through the experience of past events, often of a formal nature, such as religious festivals or ceremonial events. He explains them as: "[…] re-enactments of the past, its return in a representational guise which normally includes a simulacrum of the scene or situation recaptured" (Connerton 1989, 72). The mode of "incorporating practices" re-enact learnt performances which are integrated into the everyday almost unconsciously. As he points out: "We may not remember how or when we first learned to swim, but we can keep on swimming successfully—remembering how to do it—without any representational activity on our part at all" (Connerton 1989, 72).

In my view all three modes of bodily practice play across Fay Tan's *Pouring Milk* and Erika Tan's affective copy of it. Both artists attend to the creation—or inscription—of the video work itself, and to the performance of pouring milk: a daily task so habituated as to be unconsidered. But the ritualized commemorative re-enactment of that same incorporating act, brings an additional gravity and attentiveness to Erika Tan's performance. It is as if the everyday gesture of pouring is now leavened with a necessary significance, not only for its inscriptive emphasis as an art performance, but also as a formalized gesture of remembrance, which like the burning of boxes and her mother's paintings, performs a rite of passage. The subtle interplay of these differently nuanced performances of remembering express time as a dynamic process, where the act of pouring milk—endlessly repeated, doubled and replayed—might loosen the reifications of past and present to activate a different sort of archive. I might also add a fourth bodily practice to Connerton's grouping: that of the gestures incorporated through the slow affective filter of family relations and memories. Almost imperceptibly, I would argue, codes of family behavior are sedimented through years of interactions: meal times, jokes, arguments, stories. Could Erika Tan's

careful mimesis be a way to trace, and commit to video memory, the particularities of her mother's posture, in which she might find her own already mirrored through a life lived together, as an embodied familial archive?

An additional element introduced by Erika Tan into her reenactment in *Pouring Milk (II)* recalibrates its familial dimension further. For it is not milk that Tan pours from her mother's jug during her re-performance but latex. Extending the metaphor in the work's catalogue description, Tan explains how she replaces the milk used in Fay's performance with latex in her "attempts to stretch these references of family and motherhood" (Tan 2022). Indeed, resonant associations of maternal nurture might already be drawn from the doubled video portrait of mother and daughter simultaneously pouring milk. But what Tan is stretching is the benign metaphor of mother's milk towards a more corrosive narrative, which undermines the familial intimacy of *Pouring Milk* with allusions to more violent power relations wrought by colonial rule in Malaysia, where rubber latex was an important crop of colonial extraction. In the *Barang Barang* exhibition book, I note a photograph of a colonial era botanist (Henry Nicholas Ridley) tapping a rubber tree, which Tan has solarised so that he shines white against the tree he taps. The image was exhibited at an earlier iteration of "Barang Barang" in 2021–22, when it formed part of the exhibition "Art Histories of a Forever War: Modernism between Space and Home," Taipei Fine Arts Museum, Taiwan.[4] For Tan's Kingston show, the photograph is positioned next to a page of text, also solarized white words on black, taken from the influential philosopher, historian and politician Syed Hussein Alatas's influential book during Malaysia and Singapore's struggle for autonomy, *The Myth of the Lazy Native: A Study of the Image of the Malays, Filipinos and Javanese from the 16th to the 20th Century and Its Function in the Ideology of Colonial Capitalism* (1977). As Tan explains in her labelling, "The material histories of coir and latex emphasise conflicting labour relations between the British and their Malayan subjects. Alatas traces how these relationships carry over time various ideas around race and productivity" (Tan 2024). Tan's choice to solarize the incriminating colonial image and the page of "Alatas" text signals how this shadow history of colonial violence continues to exert its spectral presence with a material force. Tan exposes it—quite literally—through her solarized photographs, but also materially embeds it in her work. Returning to Connerton, it could be argued that incorporating practices have the potential to contain a sinister colonial dimension: where inattentive actions include the normalization of colonial values, of lazy workmen. And where the ritual practice of pouring reveals the material abundance of goods of colonial extraction unwitting consumed.

4 Curated by Kathleen Ditzig and Hsu Fang-Tze. October 2021 to February 2022.

3. "Temporal Drag" and the "Presence Effect"

The question which permeates all elements of "Barang Barang"—and for which Fay Tan provides the anchor—asks how women artists negotiated the shifting freedoms and constraints offered by colonial circulations and their legacy across Asia and Europe through the twentieth century. In the two-screen film at the heart of the exhibition, *Barang Barang: Spectral Entanglements* (2022), the intimate domestic scale of *Pouring Milk* is turned outwards to a larger cast of characters and introduces a more explicit feminist advocacy to Tan's investigation of colonial extraction, mobilities and over-looked histories traced between Britain and Asia.

In the case of *Spectral Entanglements,* (Fig. 3) its four protagonists are known to art history through the paintings, sculptures and ceramics that have accrued, in some cases with increasing value placed upon them by art history and the art market. Like Fay they traversed different geo-political contexts in their journeys between Singapore and London. Georgette Chen (Chang Li Ying) (1906 Paris/China, 1993 Singapore) began her career as an artist in Paris and the United States, before coming to Singapore via Hong Kong, China and Malaysia, where she settled in Singapore from the 1950s, teaching at the Nanyang Fine Art Academy, and painting landscapes, portraits and still lives. Dora Gordine (1895 Latvia, 1991 London) grew up in Estonia of Latvian heritage, training as a sculptor in 1920s Paris followed by Singapore, where she specialized in sculptural heads of Asian figures. She settled in London in the 1930s in Dorich House, a modernist studio and house built for her in Kingston Vale, and now part of the University estate close by the Stanley Picker Gallery. Kim Lim (1936 Singapore, 1997 London) came from Malaysia to London to study at St Martins School of Arts in 1954, where she remained until her death: a working artist married to the sculptor William Turnbull.

Figure 3. *Spectral Entanglements* (Erika Tan, 2021). Still from video. Courtesy of the artist and Stanley Picker Gallery.

The trajectories of each artist may be sketched through countries, domiciles, workplaces, exhibition lists and reviews, yet their more intimate thoughts on making art, and how their geographies, gender and place in society might constrain it, remain little known. In the conversations which Tan orchestrates between them, they compare experiences, share anecdotes, memories of making work and of where they had lived, from Paris to Singapore and London. Though their meetings, conversations and monologues in the film are speculated, their words were drawn from and shaped by biographical materials such as archives, interviews, published texts. Rather than fiction, Tan refers to her approach as "apa jika" meaning "what if" in Malay, which is also the title of her film and installation *Apa Jika, The Mis-Placed Comma*, about another overlooked artist, Halimah Binti Abdullah, a Malayan weaver who participated in the 1924 British Empire Exhibition in London.[5] Tan takes inspiration from Saidiya Hartman's concept of "critical fabulation," which challenges the absence of subaltern histories through acts of reimagining: "a narrative of what might have been or could have been; it is a history written with and against the archive" (Hartman 2008, 12). Hartman's speculative approach offers a way to write back into history those effaced stories and unheard voices—of the enslaved, the working class, women, first nations—which have never been written.

Following Hartman, Tan makes the speculative tangible and embodied through her interposition of cinematic staging to create "a space in which other truths might exist—in the past, present, and future" (Tan 2024) Encountered through the narrative momentum of the moving image, the artists are brought off the academic page and out of archival storage, to inhabit their stories in a palpable spectatorial experience that overrides art historical mediations. The four[6] come together in the drawing room of Dorich House, Dora Gordine's studio and residence, now open to the public and part of the University of Kingston, and a location which Tan was able to access as part of her 2018 Stanley Picker fellowship. For although Tan is clear that *Spectral Entanglements* is not a fiction, it is the story-telling conventions of fiction film-making that offer a means of convincing convergence across epochs and continents for the viewer.

The "total world of the story action" which David Bordwell refers to as "diegesis" (Bordwell 2016, 76) enables Tan to create a compelling onscreen space for the viewer. Whilst the rules of "classic narrative" in cinema have been much challenged and complicated since they were first articulated in the 1970s[7], the

5 For more details on *Apa Jika,* The *Mis-Placed Comma* see https://www.erikatan.net/videos. Accessed July 18, 2025.

6 The four artists were played in *Spectral Entanglements* by Eugenia Law (Georgette Chan), Lucia Tong (Kim Lim), Cathy McManamon (Dora Gordine) and Emma Vansittart (Fay Tan).

7 More famously expounded in (Bordwell et al. 1988). In recent years Bordwell revised his analysis of film narrative in relation to developments in cinema and film studies, see Bordwell

creation of a convincing world making remains central to drawing the cinematic viewer into a film. This world, as film studies tells us, is "governed by verisimilitude, then, rather than by documentary-style realism" (Kuhn 2007, 45). A number of factors are necessary to hold the viewer's attention, as Annette Kuhn explains: "The narration ensures that a fictional world, understandable and believable to the recipient of the story is set up. Verisimilitude may be a feature of the representation of either, or preferably both, the spatial location of events in the narrative and the temporal order in which they occur" (Kuhn 2007, 45). In the case of *Spectral Entanglements* the spatial location of Dora Gordine's studio home, Dorich House, enables the different temporalities of the artists to co-exist across the same spatial plane.

This is a fragile verisimilitude however, for the rendering of a coherent mise-en-scene—where the setting, actors, costume and staging inhabit the same world—is clearly subject to inconsistencies carefully crafted by Tan in her choice of costume and actors. Each of the artists appears to wear clothes which mix their era with the contemporary (I note Georgette's jeans below her cheongsam style silk shirt). They also inhabit particular decades from their lives with no apparent sequential logic. Kim Lim and Georgette Chen are portrayed as their younger selves, in comparison to Fay Tan and Dora Gordine. One collective activity attempts to re-stage gestures from the famous Chinese painting by Emperor Hui Tsung *Ladies Preparing Silk,* an ancient Chinese painting of women weaving silk, but reveals itself as the assemblage and erecting of flat-packed furniture: in both playful riposte to the idealisation of Chinese women as well as an allusion to the performance of packing and unpacking which runs throughout "Barang Barang." Like the archival melange in the exhibition's opening corridor, in *Spectral Entanglements* the sequential temporalities required to maintain cinematic verisimilitude and diegetic continuum are subtly disordered and undermined.

These diegetic displacements also serve an allegorical purpose. The anachronisms which rupture the viewer's immersion in the fictional world onscreen raise the ghosts of difficult or unspoken histories. The queer theorist Elizabeth Freeman has characterized this as "temporal drag." Specifically formulating the term through the episteme of queer time, performativity and its archiving, Freeman posits the artist Sharon Hayes" singular re-enactments of past protests *In the Near Future* (2005), where she revisits the original site of the protest, standing alone with a placard. For Freeman, "[…] in this moment of the performance her body looks less like a historicizing *detournement* than corporeal and sartorial recalcitrance […]. I'd like to call this "temporal drag" with all the associations that the word "drag" has with retrogression, delay, and the pull of

and David (2022, 16–28). For a history of different approaches to narrative theory, see Cook and Pam (2019).

the past on the present" (Freeman 2010, 61–62). Freeman's concept, theorized within the wider discourses around the writing of lesbian, queer and feminist histories, has much to offer as an insight into how corporeal anachronisms of performance, costume, setting might create a diegetic dissonance and allegorical charge, which calls suppressed histories and silenced subjects into the contemporary. As she argues: "Exteriorized as a mode of bodily adornment or even habitus, temporal drag may offer a way of connecting queer performativity to disavowed political histories" (Freeman 2010, 65).

With this in mind, we can trace examples of "temporal drag" in traditions of radical documentary filmmaking. Jonathan Rosenbaum sees Peter Watkins' *Le Commune, Paris 1871* (1999) as not "so much a realistic re-creation of anything as it is a dialogue between past and present, with each time frame used to shape and define the other" (Rosenbaum 2002). He is referring to the uncanny effect of history represented as a temporal drag where contemporary film crew are glimpsed in the nineteenth century attired crowd, whilst costumed news reporters address the viewer with microphones in hand. Other filmmakers of the radical left during the 1970s, sought like Watkins to bring visibility to working class and feminist struggles through temporal anachronisms, Jonathan Curling and Sue Claydon's *The Song of the Shirt* (1979) collided costumed reconstructions of conditions for women in the 1840s rag-trade with current day urban settings and contemporary speech. More recently, a mode of temporal drag can be traced in the films of John Akomfrah, where in works such as *Vertigo Sea* (2015) costumed figures pace contemporary landscapes, invoking crimes of colonial extraction and enslavement once sited there.

As these works intend, temporal drag creates a jolt of revelation and a different level of engagement with the histories represented and the ideologies underpinning them. Freeman recognizes the potential in temporal drag to trouble—and thus apprehend—the past through the corporeal. Indeed, in making her argument she touches on Benjamin's historical materialist flash of history as a forebear: "This call for a more sensate, sensory historical method also appears in other important critical theories, whether explicitly Marxist or not: Walter Benjamin's concept of 'shock' for instance, suggests that modernity reorganizes the human sensorium. Raymond William's phrase 'structures of feeling' suggests that social change can be felt as well as cognitively apprehended, and that it appears alongside dominant structure in the uncanny persistence of obsolete formations and the proleptic, partial emergence of new ones" (Freeman 2010, 9–10).

The artists in *Spectral Entanglements* might themselves be understood as "barang barang": temporal fragments traversing a geo-political terrain that stretches beyond their lifetimes, plunging back into the past and then resurfacing in the contemporary encounter in the gallery. As Georgette confides, she is the product of "four world events, two Chinese revolutions and two world wars, and multiple leavings and arrivals." Whereas for Dora or Fay, it was the pressures

of patriarchy and social standing which impelled their departures from familial homes: "leave or be caged." Their words, extrapolated from Tan's research, may be speculative but they help convey the complexities and ambivalences of mobilities which are simultaneously cosmopolitan and precarious.

From a feminist perspective *Spectral Entanglements* could be seen as an act of enunciation and advocation, when the contribution of women artists—particularly those of Asian heritage and from the global south—still remains occluded in histories of modernism (Andrews 2020, 19–64; Su Ling Welland 2018). Alongside the depiction of their collective encounters, Tan presents each artist in a separate monologue, facing the viewer to recount their story in a diegetic rupture of filmic immersion. Also known in narratology as "metalepsis," this stepping out of the narrative fabric into the domain of the viewer, entails a transgressive shift from one narrative address to another, known more commonly in both film and theatre as breaking the fourth wall. In this trespass from the diegesis on-screen to the contemporary space of the viewer, metalepsis provides a powerful and unmediated assertion of each artist's practice. However, that this is always posited as a transgressive act of breaking diegetic barriers could be seen as a subtle critique on Tan's part, concerning the continued barriers to artists working outside western contexts and the canonic art discourses they support. As she says, "The work speculates, labouring to create value where none was previously acknowledged, pushing back received histories to uncover the structures and ideologies underpinning them, and to create space for future interpretations" (Tan 2024). These ideologies and structures are made tangible in the rows of modernist-infused Asian heads presented in Dora Gordine's studio (Fig. 4). Once celebrated in Singapore for her depiction of Asian characters, their reifying inscription of orientalism is challenged in the speculative gaze of Georgette and Kim.

Tan's words also recall Sobchack's insights on the role of presence, or "presence effect," elicited by the overlooked media object, as "both familiar and strange" (2011, 235): "In the case of media archaeology, an overlooked media artifact (whether realized or only imagined and/or schematized) seems, at once, both familiar and strange. Thus, its suddenly 'being here' (and, all along, having 'been there') produces a 'presence effect' that is capable of overturning the premises (and comprehension) of established media hierarchies and media histories… some uncanny—and punctual—experience of re-cognition" (235).

Sobchack's hyphen in the word "re-cognition" is apposite here. There is a temporal dimension to the act of recognition, in the short pause or hesitation before a remembered face, song or house comes into familiar focus. Sobchack's hyphen invests the word with a deeper slower resonance, suggesting a process of apprehension which reveals difficult, unknown and unimagined pasts latent in an object that now seems banal, innocent, even obsolete. Following Benjamin, Hartman and Freeman, Tan's archiving processes of disordering,

re-enactment and "apa jika" reveal difficult provenances behind the objects, bodies and art which she makes present through her moving image works. But "Barang Barang"—as its etymological derivations of stuff, freight, strangers and magic signal—also proposes an unfixing of the archive, opening it to different temporalities and mobilities. And bringing to it a new affective and feminist dimension.

Figure 4. *Spectral Entanglements* (Erika Tan, 2021). Georgette Chan (Eugenia Low) confronts an Asian Head sculpture by Dora Gordine in her home studio at Dorich House. Courtesy of the artist and Stanley Picker Gallery.

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II Section.
Telematic Art: Circuits for Space-Time Navigation

Introduction*

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The experience of positioning oneself and moving inside a virtual space, with the ability to interact and act at a distance, is part of our everyday life as users of the internet, immersive technologies, videotelephony, and satellite systems. Contemporary tele-media—if this term may be used to group the various media configurations that enable increasingly comprehensive and effective forms of communication at a distance—belong to a genealogy that emerges with the rise of radio and the telephone and expands significantly between the 1950s and 1960s. During this period, television reached full social penetration; the telefax and satellite networks appeared (Telstar 1 in 1962); and the first commercial data-transfer modems were introduced (the Bell 103 in 1962).

Between the 1960s and 1970s, art also recognized telepresence as one of the defining challenges of the time and addressed it through a vast array of works that engaged both with foundational technological devices—capable of producing the virtual self and installing it within screen space—and, more broadly, with telematics and forms of remote telecommunications, using the then "new" media to push them beyond their operational limits (Paulsen 2017). This type of artistic experimentation was rarely separate from the industrial research, as demonstrated by the emblematic case of Bell Labs—the world-leading AT&T research laboratory where artists and technologists worked together—which supported many of the major inventions of the digital era (Wershler et al. 2022).

The concept of telepresence itself, introduced and debated a couple of decades later, takes shape at the intersection of the scientific-technological sphere and the artistic domain. In 1980, Marvin Minsky, then director of the MIT Artificial Intelligence Laboratory, defined telepresence as a *technique for operating at a distance* and envisioned the design of new technologies capable of extending

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our hands, enabling them to act upon remote environments, modify them, and perceive their feedback. For Roy Ascott, a pioneer of cybernetic and telematic art and promoter of *technoetics* (1991), telepresence instead signifies *the feeling of sharing a consciousness*, directly derived from sharing a virtual space. Ascott emphasizes the idea of overcoming the barrier of individuality through telematic arts in order to create a collective subject emerging from the transcendence of bodily boundaries and the interconnection of minds.

These are therefore two visions shaped by opposing orientations: one directed toward remote operation and intervention without engaging the body—and without the risks that bodily presence may entail—, the other toward forms of transcendence in which the absence of the physical body produces equality and deep connection. Yet despite this divergence, both Minsky's and Ascott's formulations reactivate an imaginary that belongs to Zielinskian "deep time" of tele-media (Zielinski 2006) and entered modernity through nineteenth-century esotericism, with its out-of-body experiences (Rheingold 1991; Grau 2003), and through parapsychology, encompassing psychokinesis, extrasensory perception, and telepathy (Andriopoulos 2005).

As "interpreters of the technological imagination of industrial society," as Simone Dotto writes in this section, artists "excavate" the roots of tele-mediality and explore the challenges that this new experience entails. They reflect on the consequences of the increasingly radical compression of spatial distances and on the new geographical perception that emerges from it, as well as on the distribution of power embedded in the design of the devices and the infrastructures employed. The two prevailing directions of their inquiry correspond to what Doron Galili identifies as the central pillars—or tropes—of remote transmission: "the feted modern trope of the 'annihilation of time and space,' which expresses a fascination with (and sometimes anxiety about) technology's conquests over natural condition […] and the configuration of network" (Galili 2020, 28).

The latter trope is addressed by the first article in this section, which also serves as a bridge to the previous part. The contribution by Rossana Galimi returns to the theme of closed-circuit systems in order to identify, within a strand of feminist video art, the media-archaeological intuition of its most evident mediatic destiny: its transformation into CCTV, a surveillance system which, in women's artworks, becomes a key framework for interpreting the processual formation of subjective identity. By rediscovering a number of overlooked female video artists who were pioneers of the medium, Galimi's article shows how the technological affordances of video—namely, the circularity of recording and transmission—brought to light the structures of the gaze, and in particular the constant self-surveillance exercised by the female subject, even in intimate settings, due to her internalization of the patriarchal gaze.

The artists reexamined by Galimi reappropriate video within "other networks"—to use the fitting expression of Lori Emerson in her recent contribution on the topic, partially included in the third section of this volume—the most significant of which is the International Videoletters Network**.** Recovering this remarkable experiment from the archives, Galimi recognized the concrete creation of a collective subjectivity in a 1970s feminist practice, which "opens" tele-vision, creatively embedding its audience in the video flow.

These attempts to "open" the circuit by transforming spectators into actors are also characteristic of the early media art experiments by the Argentine Marta Minujín, who in the late 1960s created three works that challenged the unidirectionality of television, rethinking it as a two-directional, telephone-like device that allows forms of reciprocal presence. The essay devoted to Minujìn's works focuses in particular on her *Minuphone* (1967), an installation in which a telephone booth becomes a multimedia space that produces telepresence—an extended-reality medium *avant la lettre*. The telephone booth is indeed an object of significant archaeological interest, as it prefigures the contemporary "digital bubble" (Casetti 2023) and brings to light the crucial role of the telephone in shaping virtual spaces.

The three following articles explore the first trope of telepresence, namely the space-time compression at the basis of signal transmission. Art precociously recognized the discursive—or mythical—quality of telepresence, which Matthew Lombard and Theresa Ditton (1997) defined as the ultimate phantasmagoria: an illusion of nonmediation depending on the invisibilization of the medium through "transparent" interfaces, or its transformation into a social entity perceived as a living organism.

This phantasmagorical aspect is highlighted above all in Simone Dotto's article, which contrasts the ideologies of telepresence with its aesthetic re-functionalization in sound art works. The contribution usefully focuses on the radio as a medium that generated the imagination of an immaterial space composed of waves through which it is possible to travel. This ranges from Guglielmo Marconi's vision of an "increasingly resonating, interconnected, simultaneous space, where everything can be heard everywhere as soon as it happens" (*infra*) to the sound sculptures of Bill Fontana, which create temporary circuits of audio transmission through which sounds from wild spaces are overlaid onto urban landscapes. Central here is again the distinction between forms that close the circuit and those that open it: the possibility of neutralizing external sounds by including them in the safe space of domesticity as opposed to the pursuit of sensory contrasts that disorient perception and open it to experiences of complex chronoesthesia in which past and present intertwine.

The temporal dimension is central to telepresence: beyond the mere possibility of navigating the past through its sounds, the simultaneity celebrated by telepresence is, in fact, a mythical construction based on a subtle mixing of

times. The following essay by Maria Teresa Soldani demonstrates this primarily at a phenomenological level, analyzing the multiple temporalities of the transmitted signal, which—whether in the case of video or sound—consists of a network of thin slices of time corresponding to the successive instants in which lines and frames appear on the screen. Feedback aesthetics—the focus of her contribution—stem from a reflection on the materiality of the signal and highlight a frequently misrepresented genealogy that redistributes the relationships between technologies, tracing the electronic camera not to cinema or photography, but to the telegraph, or, as Nam June Paik notes, to the microphone (*infra*). Building on this convergence, Soldani reconstructs the US cultural scene of the late 1960s and early 1970s, uncovering a dense network of coordinated sites for experimentation in intermedia events. The detailed mapping of relationships between artists, media centers, laboratories, and projects drawn up by Soldani derives from extensive archival research conducted in North American archives and leads to the rediscovery of forgotten works, or works that have received insufficient attention, as in the key case of Maryanne Amacher's long distance music.

This section concludes with the seminal contribution of Kris Paulsen, who illuminates the issue of space-time entanglement in telepresence experiences through the analysis of a contemporary media artwork: a limit case study that challenges the notion of simultaneous interaction over long distances promised by algorithmic tele-media. Paulsen focuses primarily on David Bowen's *Tele-present Wind (Mars Wind Version)* (2024), an installation based on the transmission to Earth of Martian wind, made possible by data collected from the wind sensor on the Perseverance Rover. The artwork provides the occasion for a rich theoretical reflection on the "thickness" of the present moment and on the delay inherent in every form of telecommunication, which, in the case of interplanetary distances becomes significant and generates new forms of human-machine interaction. Paulsen's physics and philosophy of telepresence draw attention to the materiality of the video stream and its legibility according to the frame of reference, while also highlighting the role of imagination in filling the long stretches of waiting with a sense of future. Offering an ideal conclusion to this section, Paulsen defines algorithmic telepresence as a "new phenomenological means of being entangled with others in space and time."

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Between Surveillance and Self-Surveillance: Feminist (Re)Visions of the Closed Circuit*

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Abstract

This chapter proposes a feminist media-ar(t)chaeological investigation of contemporary telepresence in its facet of surveillance and control. It traces how the home—traditionally conceived as a private, feminine, and protective space—has long operated as a surveillant dispositif anticipating the current mediatization of domestic life. Excavating feminist video practices from the 1970s to the 1990s, it examines how artists used the electronic circuit of video to expose the circuital logic of discipline. The chapter argues that, by reappropriating horror's audiovisual conventions, these works revealed the domestic sphere as a site of gendered aggression, prefiguring the contemporary logics of tracking, monitoring, and (self-)governance.

Keywords: Surveillance; Feminist Media Studies; Feminist Media Archaeology; Second-Wave Feminism; Closed Circuit; Feminist Video Art; Horror

Abstract

Il capitolo propone un'indagine media-ar(t)cheologica e femminista sulla sorveglianza che permea le forme della telepresenza contemporanea, ripercorrendo il modo in cui la casa—tradizionalmente concepita come spazio privato, femminile e protettivo—ha operato come dispositivo di sorveglianza ben prima dell'attuale mediatizzazione della

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vita domestica. Riscoprendo alcune pratiche video femministe dagli anni '70 agli anni '90, esamina come le artiste hanno utilizzato il circuito elettronico del video per esporre la logica circuitale della disciplina. Il capitolo sostiene che, attraverso la riappropriazione dei codici audiovisivi dell'horror, queste opere hanno rivelato la sfera domestica come luogo di aggressione del femminile, prefigurando le logiche contemporanee di tracciamento, monitoraggio e (auto)governance.

Parole chiave: Sorveglianza; Studi femministi dei media; Archeologia femminista dei media; Femminismo della seconda ondata; Circuito chiuso; Videoarte femminista; Horror

1. Telepresence and the Domestication of (Self-) Surveillance

In 1980, co-founder of the MIT Artificial Intelligence Laboratory Marvin Minsky coined the term telepresence "to designate remote manipulation of robots by means of 'high-quality sensory feedback'" (Minsky 1980 in Paulsen 2017, 7). If this definition of telepresence as remote control remains today one of the most profitable cornerstones of surveillance capitalism (Zuboff 2019), evident in warfare or space exploration (see Paulsen, *infra*), for ordinary people to be telepresent—now understood more broadly as "the feeling of being present at a remote location by means of real-time telecommunications devices" (Paulsen 2017, 2)—increasingly means not to control but rather to be controlled, tracked, and surveilled. Sociologist David Lyon, founder and director of the Surveillance Studies Centre at Queen's University at Kingston, defines surveillance as "the focused, systematic and routine attention to personal details for purposes of influence, management, protection or direction" that "occurs as a 'normal' part of everyday life in all societies" (2007, 14) and therefore is also part of our telepresent lives—as Paul Virilio aptly foresaw when reflecting on the shift from infrastructures of transportation to infrastructures of transmission that enable remote control and continuous observation ([1995] 1997). Tracking and surveillance indeed characterize contemporary forms of telepresence such as social media networks, extended reality devices, and videoconference interfaces. Furthermore, what becomes increasingly evident in this media landscape is that the telepresent subject is not only a monitored subject—whose desires are recorded, predicted, and, above all, dictated (Bodini 2020)—but, more significantly, a subject who monitors themselves: one who adjusts their own image within the small rectangle at the bottom-right of the computer display during a video call (Dalmasso and Grespi, *infra*), or who, when wearing a virtual reality headset, must regulate their bodily movements within the grid's perimeter—tellingly called "Guardian" in the Meta devices—beyond which the 360° image disappears (Grespi and Malavasi 2022).

Even in those cases where surveillance, and therefore the power to monitor the other, is rhetorically promoted as a means of safety, it actually proves

ineffective in preventing the very supposed threats it is meant to avert, thus turning instead into a device for spectacularization. Considering, for instance, that CCTV (closed-circuit television) footage is typically overwritten within a short span (often 24 hours) without being watched by anyone, its function is less one of protection than of retrospective display: as in the case of the attack of July 28, 2025 at 345 Park Avenue in Midtown Manhattan (the deadliest shooting in New York City since 2000, Mascarenhas et al. 2025), where the twenty-seven-year-old Shane Tamura was recorded entering a building with an assault-style rifle before committing a massacre (Fig. 1), yet no one was alerted in real time and no one was watching those images as the event unfolded. Surveillance thus transforms the very people it purports to "protect"—those who inhabit the controlled spaces in everyday life—into monitored subjects themselves. This spectacularization of a "synthetic banality, fabricated within a closed circuit and under a controlled screen" (Baudrillard [2001] 2011, 5) extends beyond public spaces and also infiltrates domestic settings. A telling example is the American tabloid television program *Inside Edition* (distributed by CBS Media Ventures), whose reports often rely on home surveillance footage, collected under a dedicated tag on the program's website that provides access to all segments built around surveillance recordings, which often feature footage from both indoor and doorbell cameras capturing the inhabitants of those homes (Inside Edition, n.d.). The growing presence of home security devices in the Western world, often fueled by the fear of intrusion (George et al. 2021), paradoxically renders the domestic sphere transparent, its inhabitants illuminated rather than secured.

Figure 1. CCTV footage still of the 345 Park Avenue shooter, New York City, July 28, 2025. CCTV still. Public Domain.

The disciplinary society conceptualized by Michel Foucault ([1975] 1977), later reconsidered and further developed by Gilles Deleuze into the notion of control society ([1990] 1995), did not anticipate the role of the home as the confluence of intersecting regimes of visibility, surveillance, and self-surveillance. This convergence now materializes through a constant transmission of one's own image across multiple technological environments that characterize specific domestic spaces, such as those mentioned earlier of videoconferencing platforms, social media spaces, and extended realities. Such configurations of telepresence signal an extension of control into a space once conceived as private, inhabited perhaps by disciplinary institutions such as the nuclear family (Taylor 2012), yet not disciplinary in itself.

The evolution of this condition of pervasive surveillance has been accompanied, and in some respects anticipated, by an intense cinematic and televisual production. From the 1990s onward (Zimmer 2015), and even more prominently after 9/11 (Cesaro 2022), the imaginary of surveillance has progressively entered film and television narratives, shaping both aesthetics and storytelling. As such studies attest, these include visions of state security and global intelligence (*Enemy of the State*, Tony Scott, 1998), fantasies of predictive policing and temporal omniscience (*Minority Report*, Steven Spielberg, 2002), and the bureaucratic voyeurism of authoritarian regimes (*The Lives of Others*, Florian Henckel von Donnersmarck, 2006). More recent works expose the convergence of corporate and governmental monitoring (*The Circle*, James Ponsoldt, 2017) and the architectural dimension of confinement (*Orange Is the New Black*, Jenji Kohan, 2013-19). Yet it is within a specific genre, the horror film, that the essential traits of this surveillance logic had long been foreshadowed, well before the domestic sphere became saturated with smart technologies: horror has long imagined the home as a surveillance device in itself, a space where the act of watching precedes and enables the act of violence (Clover 1992)—typical in many slasher films since their inception with *Black Christmas* (Bob Clark, 1974) and *Halloween* (John Carpenter, 1978). This asymmetrical structure of looking—an extreme version of that typical of classical cinema identified by Laura Mulvey (1975)—where the male aggressor's gaze transforms the domestic environment from a safe haven into a threatening enclosure, and the woman becomes both the object and the victim of that gaze, has shaped an imaginary that horror has repeatedly thematized since its post-classical transformations. Typically, this female victim is not a self-surveilled or disciplined subject but rather embodies an emancipated form of femininity that emerged in the wake of second-wave feminism, one that resists the internalization of patriarchal control and domestic surveillance. Her refusal or inability to internalize these mechanisms of control renders her visible, exposed, and therefore punishable within the film's moral economy. It is this very imaginary, often discussed in relation to the genre's misogynistic undercurrents, that horror rearticulates within the post-media

landscape (Eugeni 2022) of works such as *The Invisible Man* (Leigh Whannell, 2020) and *The Beast* (*La Bête*, Bertrand Bonello, 2023).

This chapter approaches the violent and misogynistic imaginaries of domestic surveillance that recur in the horror genre as part of a broader media constellation. To examine how these imaginaries emerged and how they anticipated the contemporary mediatization of the home, the chapter proposes a feminist media-ar(t)chaeological excavation. Through this lens, it traces the path of video art practices informed by second-wave feminism and its early recognition of the domestic environment as a fully political space (Dalla Costa and James 1972; Federici 1975; Delphy [1970] 1980) and a site of surveillance long before it became saturated with technological devices. Then, it explores how such video practices increasingly re-appropriated horror's emerging imaginary of the home as a threatening site of gendered aggression in order to expose and reconfigure the circuit of visibility itself. Turning to feminist art practices thus serves a double purpose: first, in line with feminist surveillance studies, it allows us to understand how surveillance, broadly conceived to include techniques and technologies of monitoring and documentation, "mask[s] and reinforce[s] the gendered, sexed, raced, and classed exercise of power" (Dubrovsky and Magnet 2015, xi); second, it makes it possible to analyze how feminist theories and video practices anticipated, well in advance, phenomena related to our relationship with circuit-based media—media that are not simply means of communication but operate according to the circuit as a technologically mediated governing principle that totalizes and organizes the circulation of subjects, objects, data, and bodies; media that rely on "the application of screening technologies that modulate the flow of information (including bodies) through space and across time" (Packer et al. 2023, 7-8). From this perspective, horror's visualization of domestic surveillance operates as a popular, symptomatic reactivation of the feminist strategies that unveiled the domestic sphere as a site of patriarchal control. Through a deep dive into the feminist practices that revolved around the medium of video between the 1970s and the 1980s, this chapter argues that what horror dramatizes in its catastrophic and spectacular dimensions, feminist media practices had already exposed as the very logic of the circuit that now structures contemporary subjectivities and regulates the dominant forms of telepresence.

2. Toward a Feminist Artchaeology of Domestic Surveillance

The media-archaeological excavation proposed in this chapter is both feminist and artchaeological. First, it is *media-archaeological* because it investigates how the domestic sphere—culturally conceived as a private and protective space (Bachelard [1958] 1964; Williams 1985a, 1985b)—has been reconfigured by telecommunication media (Virilio [1988] 1994) into a site of surveillance. The investigation will be conducted by revealing that this transformation did not originate with new media but rather that it extends a pre-existing condition, in which the home has long operated as a surveillance circuit or even dispositif (especially for women). This will be illustrated by looking into early practices with video, a medium that enabled an unprecedented number of people to experiment with telepresence. Second, it is *artchaeological* because it focuses on artistic explorations that, in many cases, preceded and informed theoretical reflection. By examining how feminist artists of the 1970s and 1980s engaged with the emergent medium of video, this approach highlights their attempts to "open" its circuital logic; to produce self-reflexive works (Spielmann 2005) on the closed-circuit nature of video and the surveillant effects it produces on the female body; to expose the domestic space as a site of surveillance and discipline; and to reappropriate horror's forms and tropes to interrogate the interconnections among surveillance, closed circuit technologies, and the home. As will be seen in the analyses that follow, such concerns are made tangible in specific works that critically engage with the domestic space and video and their closed-circuit structure. Finally, this excavation is *feminist* in that it seeks to recover feminist artistic practices in order to recognize their relevance for understanding the present, an era in which biotechnologically mediated relations have become essential to subject formation (Braidotti 2013), and in which contemporary forms of power and control have grown into practices of "domestic" (Virilio [1998] 2005, 13) as well as "panoptical (and permanent) tele-surveillance" (121).

To conduct this excavation, it is first necessary to clarify what is meant by "closed circuit." In its strict, technical sense, it refers to a video transmission system linking one or more video cameras to one or more control monitors, where images are transmitted, and visualized in real time in a non-open flow and sometimes recorded. Today, this system has been remediated in technologies that enable remote interaction without the need of being physically present: telecommunication media, or tele media, including those used for surveillance. Yet, the notion of the closed circuit can be extended beyond its technical dimension, as a lens to understand power relations and the ways power organizes flows of information, bodies, and media (Packer et al. 2023), producing surveillance and discipline. In this sense, the circuit is not only metaphorical, but first and foremost physical, conceptual, and logical (Packer et al. 2023): an *assemblage*

(Deleuze and Guattari [1980] 1987) that also shapes the domestic space, where surveillance and specific disciplines materialize, producing the subjectivities of its inhabitants. Understood in this expanded sense, the circuit also functions as a *technology of the self*, a means by which subjects act upon their own bodies and identities (Foucault 1988) through disciplinary practices of self-production that intersect with technologies of power (Foucault [2004] 2007, [2004] 2008). The home, thus, can be conceived as a surveillance dispositif long before the advent of the telepresence media—a fact that, as the following sections will show, feminist artists had already intuited and thematized in early video works. This wider conception of the circuit informed in fact early feminist video practices that employed the closed-circuit technology both as a tool and as a conceptual model: a site where the individual is observed and produces their subjectivity as a form of disciplined self-perception. In this framework, feminist artists linked the circuit to the home—a space culturally coded as feminine—as a privileged site for the internalization and practice of patriarchal norms, a space where the staging of the feminine and self-surveillance converge in the production of female subjectivity.

Feminist philosophers drawing on Foucault have argued that the panoptical model of surveillance, while presenting itself as an ungendered and universal paradigm of subject formation, actually refers to a male model of subjectivity. When extended to the formation of female subjectivity, it reveals that disciplinary mechanisms produce bodies according to specific gender practices and norms.[1] From this perspective, women learn to regulate their own bodies not because they are constantly being watched, but because the "male gaze" (Mulvey 1975), understood as a disciplining patriarchal gaze internalized within the Self, has become an integral component of their self-perception. In this way, public forms of discipline find their counterpart in the private sphere: the home becomes the site in which patriarchal norms are incorporated into the Self, regulating the female body and its modes of visibility. Such theoretical reflections have been in many instances anticipated by feminist artistic practices born in the historical conjunction that, between the late 1960s and the 1970s, saw the rise of both portable video devices and second-wave feminism.[2] Many feminist artists approached the nascent medium of video, in line with its artistic appropriation in opposition to television as a mass medium (Churner et al. 2024) and to the persistent invisibilization of women in media and arts in general (Nochlin 1971; Couey 2003) and in electronic arts in particular (Soldani 2025). With the introduction of portable video recorders, which became available on the market in 1968 (Ryan 1988), independent video was seen as an alternative to broadcast television and its one-way production and delivery system

1 See for example Bartky 1988, 1990 and Bordo 1993. For an overview of such theories see Galimi and Grespi 2024.

2 For an overview of second-wave feminism see Thornham 2001.

(High et al. 2014). Similarly, feminist experimentations attempted to "open" the circuit of one-way communication with initiatives such as the International Videoletters Network (Fig. 2), a project active from 1975 to 1977 consisting in a network of video exchange between feminist collectives, with the aim of building an independent media system handled by women and able to contrast the patriarchal imaginary of broadcast television. Every two months, the participating feminist groups produced a thirty-minute unedited video "letter" and sent it to sister groups in other cities, where the video letter was screened, the reaction of the audience recorded and included in the following video letter. These community projects employed the possibility of transmission to foster feminist consciousness-raising, "the move to transform what is experienced as personal into analysis in political terms, with the accompanying recognition that 'the personal is political', that male power is exercised and reinforced through 'personal' institutions such as marriage, child-rearing and sexual practices" (Thornham 2001, 26). Albeit not based on real time transmission, this network attempted to "open" the circuit by transforming the spectators into participants (in line with the practices described by Soldani in this volume), building a non-hierarchical system based on collaboration and circulation, and moving women from the domestic environment, where broadcast television aimed to confine them after the temporary freedom afforded by the context of World War II (Mulvey 1986; Spigel 1992), into a collective and feminist public space. The videos, which featured women discussing several subjects such as work, sexuality, the body, politics, and arts, enabled geographically distant women to become acquainted with one another's life contexts, fostering a shared space of communication across large distances and offering an alternative informational infrastructure to the centralized logic of broadcast television (Davis 2023). For instance, the *Feminist Studio Workshop Videoletter* (1975) recorded by feminist video pioneer Susan Mogul offered a tour of the Woman's Building in Los Angeles—a center for artistic activities that offered classes and meeting spaces (Pinkel 2003, 35)—, with the idea of establishing a video exchange for cultural purposes with the Women's Interart Center in New York City and other feminist collectives in Washington, D.C. and Chicago. The video, shot with a black and white portapack, sweeps the spaces of the building while another Workshop member holds the microphone and conducts interviews with other members of the collective to gather detailed descriptions of its spaces and activities. With the explicit intention of creating an alternative information program for cultural exchange among communities of women, in the interviews attention is also devoted on how to apply for state funding in order to purchase technical equipment to develop artistic projects. The idea was to assist the fundraising of other collectives involved in the network and to create alternative means of production, which for them meant appropriating and disrupting the dominant circuit of information. This experience is an example of the fundamental role

video had in the development of second-wave feminism, not just because it facilitated exchange among geographically distant feminist communities, but also because it was perceived as a liberating tool in itself, as it allowed women to work without a film crew (Shemilt and Cubitt 2019), record their point of view, and target institutions such as marriage and unpaid care and domestic labor, as well as media industries where they were marginalized.

Prominent artists at that time were aware that the history of portable video and that of the feminist movement were intertwined (Milano 1973) and used their influence to give visibility to other, less-known artists. This is the case of the Women's Video Festival, conceived by electronic arts pioneer Steina Vasulka in 1972 to address the glaring absence of female artists' works in the burgeoning video festivals of those years, despite their significant contributions to the video movement—at that time, between a third and a half of video makers were women (Vasulka 1995). Vasulka thus involved video maker Susan Milano and entrusted her with the direction of the festival, which was held at The Kitchen Center for Video and Music in New York City (a non-profit art institution founded by Vasulka with her husband Woody in 1971, Soldani 2025) and saw the collaboration of The Kitchen program director Shridhar Bapat and Laura Kassos (Electronic Arts Intermix, n.d.). Until coming to an end in 1980, the festival functioned as the main showcase for American female video artists who, despite being acknowledged for their artistic and professional expertise, were almost never employed in directorial positions within broadcast television programs (Milano 1976). Although having been largely ignored (Barlow 2003 still remains its only academic account), this experience represented a site of collective feminist consciousness-raising, where taking control of a portable camera meant gaining the possibility of self-representation and video functioned as a tool for analysis and reflection. The Women's Video Festival and the International Videoletters Network can be read as symptomatic formations within the 1970s cultural climate. Both initiatives emerged at a conjuncture in which gender politics intersected with an experimental rethinking of television, where video became the tool for opening the otherwise closed circuits of media production and distribution and disrupting its flow of information—in line with the activities of so-called "guerrilla television" (Shamberg 1971), to which the Videoletters Network can be broadly ascribed and which the Women's Video Festival welcomed in several occasions. At the same time, many artists who took part in or were shaped by these contexts turned video critically back upon itself. Rather than reaffirming its emancipatory potential, they interrogated its circuital logic and its complicity with power structures. The following sections consider a group of feminist video works that engage with the concept of the circuit in different ways. The first one examines how early videos, including *Representational Painting* (Eleanor Antin, 1971), *Instructions No. 1* (Sanja Iveković, 1976), *Jumps* (Rita Myers, 1973), *Slow Squeeze* (Rita Myers, 1973),

Gestures (Hannah Wilke, 1974), and *Vital Statistics of a Citizen, Simply Obtained* (Martha Rosler, 1977), foreground the surveillant logic embedded in the closed circuit. The second section investigates works produced in the same years that reframe the domestic space as a site of (self-)surveillance, such as *Facing a Family* (VALIE EXPORT, 1971), *Enclosure* (Lynda Benglis, 1973), *Semiotics of the Kitchen* (Martha Rosler, 1975), and *Sleep Performance* (Rita Myers, 1974). The third section turns to works like *Doppelgänger* (Elaine Shemilt, 1979–81), *Syntagma* (VALIE EXPORT, 1983), and *Possibly in Michigan* (Cecelia Condit, 1983), which reappropriate horror's audiovisual conventions to probe the entanglement of surveillance, the closed circuit, and the home. Finally, the analysis of a more recent work, *The Amateurist* (Miranda July, 1998), will allow us to conclude and return to the present day, reconnecting feminist video art's concerns to contemporary forms of domestic surveillance.

Figure 2. International Videoletters logo used in New York City, by Carol Clement, 1975. With permission of Carol Clement and Ariel Dougherty.

3. Performing Under Surveillance: Feminist Exposure in/of the Closed Circuit

At this early stage, several artists used video to reveal the causal relationship between the exposure to an external gaze and the normalization of the self, focusing on female disciplines such as makeup and cosmetic surgery (*Representational Painting*; *Instructions No. 1*), limitations in posture (*Jumps*; *Slow Squeeze*), medicalization (*Vital Statistics of a Citizen, Simply Obtained*) or prescription of movements (*Gestures*). In many of these videos, artists grounded the performances in the interaction with their own image as transmitted on the monitor, reflecting on the disciplining effect of the closed circuit while simultaneously exposing the circuital nature of female surveillance itself. *Representational Painting*, Eleanor Antin's first experiment with video, is a thirty-eight-minute, mute, black-and-white tape that portrays the California-based artist seated on a chair, dressed in jeans and a white bra, slowly and repetitively applying skincare and makeup. The video alternates, through crossfades, between two three-quarter shots: a medium close-up of Antin's right side and a close-up of her left. As she repeatedly and tediously applies products to her face, her gaze is directed off-screen, toward the monitor where she observes her recorded image. Her gestures unfold in a kind of loop: opening makeup containers, spreading product on her face while observing herself on the monitor, tucking her hair, running her hands over her face, taking a drag on her cigarette, and reaching for another product. By highlighting the obsessive repetition of gestures that have become automatic for most women, Antin exposes their disciplinary nature and the role of reiteration as a tool for normalization. Indeed, Antin staged this performance before a monitor connected to two cameras positioned on either side that transmitted her image in real time, producing a split-screen image. This setup allowed her to observe herself from two distinct external perspectives and to adjust her makeup accordingly—a visualization of how femininity is performed under the disciplining pressure of multiple external gazes.[3] A similar logic structures *Instructions No. 1*, a six-minute black-and-white video by Croatian artist Sanja Iveković in which she is framed frontally in close-up while tracing arrows on her face with an eyeliner, emulating the lines drawn by surgeons before cosmetic procedures—literal "instructions" for normalizing women's appearance and preventing wrinkles, crow's feet, or looseness. With these gestures, the artist reveals the implicit instructions that guide disciplined femininity, including a constant attention to one's appearance. After drawing the arrows, she blends them into her skin as if she were applying a cream or a foundation, linking surgery and makeup as two facets of the same disciplining process. Here too, Iveković does not look at her reflection into the camera lens but most likely at

3 Set photographs confirm this setup. See Lonidier 1972.

her image transmitted in real time in a monitor, responding to the mediated version of herself produced by the electronic circuit. Rather than functioning as a mirror, the closed circuit becomes a space where the gaze of the camera (and, by extension, the patriarchal gaze) intervenes in the constitution of subjectivity. Far from showing that the monitor functions as a mirror, these works expose how, within the gendered relation to the mirror (De Beauvoir [1949] 1953), the latter operates as a site of convergence for multiple disciplining gazes that are ultimately internalized.[4] These works suggest that a woman's perception of herself in the mirror is not a direct or autonomous self-image, but one constructed under the pressure of external norms and ideals that delineate the boundaries of socially acceptable femininity. Within this framework, the circuit operates both as an enhancer of this condition of perpetual surveillance and as a means for revealing its operations. A complementary investigation is found in *Jumps* by New York-based artist Rita Myers, who before dedicating herself to multimedia installations experimented with the video camera and closed-circuit monitoring, creating what she called "mediated encounters with her own body" while attending courses at Hunter College by video artist Robert Morris and feminist art historian Linda Nochlin (Myers, n.d.a). In this three-and-a-half-minute black-and-white video, Myers attempts to escape the closed circuit by jumping out of frame. Initially, the camera captures only her feet, then gradually widens to include her lower body, forcing her to leap higher and higher. Myers' eventual failure to elude the surveilling gaze of the camera underscores the inescapability of the closed circuit and its power to structure the relationship with oneself. Myers further explored this dynamic in *Slow Squeeze*, an eleven-minute video depicting her lying on the floor with her arms extended upward to fill the frame. The camera, initially capturing her entire body, gradually zooms in, narrowing the frame around her figure. Checking her image on an off-screen monitor, Myers then constricts her body accordingly in order to fit the increasingly smaller frame. Notably, the artist takes on a progressively disquieted facial expression as the high-angle zoom approaches her, making her look almost helpless on the floor, evoking the aforementioned connections between being watched and being attacked as well as suggesting that there is no space for subjectivity outside the closed circuit. Another work that explicitly connects the closed circuit to the formation of female subjectivity as performance is *Gestures* by Hannah Wilke. Frontally framed in close-up and extreme close-up, Wilke enacts exaggerated and reiterated facial poses and gestures such as massaging her face, smiling forcibly, or sticking out her tongue, first while observing herself on a monitor and then performing it directly for the camera. This oscillation between two positions makes visible the disciplining process by which women learn to regulate their own image.

4 De Beauvoir underlined that the mirror is a gendered object that has a role in producing femininity. For a recent take, see Ruggerone and Strauss 2022.

Beyond these experimental inquiries into the effects CCTV monitoring, *Vital Statistics of a Citizen, Simply Obtained* stands out for its formal difference and conceptual depth. The thirty-nine-minute video reflects on female surveillance in terms of medicalization. In the first part of the video, Martha Rosler stages an examination scene where her voiceover overlaps with dialogue. She is instructed to stand against a wall as a doctor dressed in a white gown traces her body contours with a marker, asking her to move her arms in order to draw the outline of a Vitruvius man, while the other one assesses her proportions with a measuring tape, recording each detail. Three female assistants in identical white coats observe as Rosler is asked to undress and submit to the measurement ritual. The voiceover narrates the internalization of a disciplinary, pathologizing, and objectifying gaze that fragments the female body into measurable parts—a logic reinforced by technologies of medical imaging and scientific visualization (Cartwright 1995). As the doctors complete their examination, Rosler dresses again before a mirror, while different versions of herself, each with altered attire and demeanor, appear in succession on the screen, performing disciplined versions of femininity. The voiceover simultaneously lists a series of actions that converge into female discipline—for instance, "to see one's features up close" or "to accept that there's meaning in measurement". The final part of the video juxtaposes photographs of women and children being measured with Rosler's recitation of what she calls "crimes against women", among which she enumerates madness (along with femicide, rape, and infibulation), historically weaponized to enforce female discipline in Western countries (Foucault [1963] 1973; Ussher 2017). Throughout the piece, references to television advertising highlight the role of media in producing both women's social isolation and self-surveillance. Using video to reflect on its own complicity, Rosler stages in front of the camera a dual process: patriarchal surveillance, represented by the doctors, and women's complicity in the perpetuation of the system, embodied by the assistants. Collectively, these works demonstrate how feminist artists employed the closed-circuit technologies as both a material and conceptual tool to expose, inhabit, and contest the mechanisms of surveillance, normalization and discipline inscribed on the female body, while also acknowledging that the same device could perpetuate the very systems it sought to critique.

4. Domesticity Under Watch: Feminist Politics of Space

Other clusters of early videos turn explicitly to the domestic sphere, in line with women artists' reclamation of domestic experience (Pinkel 2003), as well as with feminist interrogations of the political nature of "private" institutions such as marriage and the family, and with the broader "fear of being seen by television" (Spigel 1988) that accompanied the arrival of the TV set in postwar homes. Rather than serving as a "window on the world" (Hutchinson 1946 in

Spigel 1992), television often operated as an eye turned toward the interior that disciplined family relations, especially women's roles. As Lynn Spigel argues, broadcasting not only circulated reactionary images of femininity (a theme partly addressed in *Semiotics of the Kitchen*), it also reconfigured the workload of the housewife, who had to redesign domestic space to accommodate the "ideal" viewing position for others while remaining the perfect cook, homemaker, wife, and mother, able to perform chores and family time in the gravitational field of the living-room set (Spigel 1988).[5] In 1971, Austrian artist VALIE EXPORT realized *Facing a Family*, a five-minute black-and-white video commissioned by the Austrian national television and broadcast on February 28. The work presents, frontally and without commentary, an Austrian middle-class nuclear family—father, mother, son, daughter—eating at the table while watching a television placed just below the recording camera, effectively aligning their gaze with that of the "real" audience at home. Viewers, despite being accustomed to experimental programming, reportedly assumed a transmission malfunction (EXPORT and Cavoulacos 2021): they did not expect to be "watched back" by the TV window turned into an eye, that is, by the family on screen. Initially conceived as a two-way communication performance (see Soldani, *infra*), the piece stages the incursion of an external gaze entering the private space of the home and, with it, the disciplining role of TV within the household.[6] Lynda Benglis explores a comparable incorporation of the spectator in *Enclosure*, a seven-and-a-half-minute unedited tape that scans a domestic setting where a man on a sofa pets a cat before a television monitor. After a moment of "no signal", the TV suddenly displays a delayed close-up of the same man. The effect is a makeshift closed circuit that incorporates its viewer. Benglis extends the "enclosure" to the room's architecture (sofa, walls, thresholds) and broadcast culture itself, framing yet another monitor that transmits a live hockey game. Broadcast television is again central in Rosler's classic *Semiotics of the Kitchen*. Dressed as a housewife, the artist performs an alphabet of kitchen tools, parodying Julia Child-style cooking shows of the 1960s–70s. As the performance progresses, Rosler's gestures sharpen: knives and rolling pins are wielded like weapons, their use verging on violent. Alluding to the kitchen's feminization and to utensils as extensions of the female body—culturally underscored by persistent links between procreation, gestation, and kitchen technologies (Olivier

5 As highlighted by Alison Harvey, the new imaginary conveyed by television allowed only middle- and upper-class heterosexual (and often white) women to identify or reject identification with this disciplined version of femininity. Women in low-income families, women of color, and non-heterosexual women, for instance, were completely excluded from the dominant discourse on femininity and mostly invisibilized within the feminist debate. See Harvey 2019, 15-16. On the invisibilization of female domestic labor addressed by contemporary feminist artistic practices, especially from a racialized point of view, see Strauven (*infra*).

6 There are existing preparatory drawings of the experiment (EXPORT and Cavoulacos 2021; Medien Kunst Netz, n.d.).

2020)—Rosler simultaneously demonstrates and subverts the broadcast image of the docile, domestically absorbed woman. Everyday domestic life appears as a site of repression, and therefore of potential violent revolt, for female subjectivity. Additionally, the critique to how telecommunication media reinforce the ideal of the disciplined housewife engaged in unpaid domestic labor anticipates recent accounts that now view domestic labor as the key to comprehend the forms of unpaid work associated with digital media industries (such as the management of community forums or the uploading of public domain information) that have been condensed into the concept of "the Digital Housewife" (Jarrett 2016). If these two works attempt in a way to subvert gendered dynamics of surveillance, either by overturning the position of the beholder of the gaze into that of the surveilled (*Enclosure*) or by hinting at a potential rebellion (*Semiotics of the Kitchen*), Myers instead stages their persistence. In 1974, the artist performed a six-hour piece called *Sleep Performance* in the studio of the Synapse Cable Communications Network, Syracuse University's cable television and experimental media program, which provided monitors in dormitories and other locations, and offered services such as broadcasting and post-production for students, faculty, staff, and the community (Syracuse University Libraries, n.d.).

Myers slept overnight on a bed in the studio, surrounded by monitors receiving transmissions from elsewhere on the network where other participants were invited to make "contact" with her (i.e. to be telepresent in her space) and observe the performance taking place. Surviving documentation includes photos (Fig. 3–4) and a twenty-four-minute video with a voiceover recorded several weeks after the performance by Myers and another man, titled *Second Thoughts* (Kitchen Center for Video, Music, Dance, Performance, Film, Literature 1974), based on recollections of dreams Myers had following the performance (Myers, n.d.b). The tape opens with a horizontal split screen: an upper band of text explaining the setup of the performance is placed above the close-up shot of Myers's asleep face. The explanation, directed at the other participants, insists on the effects of the remote interaction on the sleeping artist, using expressions such as "your message may penetrate her sleep" or "when she awakes, she will probably be preoccupied by your suggestions," hinting at some kind of aggressiveness embedded in this operation. As Myers reports, while participants were interacting, a view of her space including the monitors was transmitted, enabling them to see themselves virtually present beside her (Myers, n.d.b). The following part of the video shows a static shot of Myers asleep on the bed, surrounded by two monitors transmitting live signals from elsewhere: a man on the monitors touches the camera that records him, thereby "virtually" touching the artist's hand as it rests beside the studio monitor, creating a circuit that involves his and the artist's body. The male voiceover calls her name and repeats "I can almost touch you; my image surrounds you," making explicit that this circuit is not neutral but produces a form of gendered vulnerability: a sleeping woman

exposed to insistent men that gaze at her and aggressively try to make contact with her. Significantly, the performance took place the same year Marina Abramović presented *RHYTHM 0* at Studio Morra in Naples, where for six hours she was radically available to the audience and revealed the speed with which docility converts into aggression. Allowed to perform any kind of action on her body with the available objects, after a few hesitating hours, the audience realized her complete vulnerability and started provoking and injuring her. Unlike Abramović, Myers was *protected* (Casetti 2023) by the mediation of the screen; yet it is precisely closed-circuit technology that enabled this predatory proximity in the first place, albeit mediated—a fact on which the artist reflects in the voiceover, saying that the participants' actions "imply[ed] a distance where there was none." Two further moments equate telepresence with surveillance and threat. The signals transmitted by the participants on the monitors are in fact repeatedly interrupted by other signals: one shows a window from which a silhouette appears to peek into the studio, overturning the idea of TV as a window *onto* the world to reveal it as a window *into* private space; another frames Myers in close-up, and the frame is staged in order to convey a voyeuristic act, as a curtain partially conceals the artist's body from view. The camera operator pulls it to gain a better view of the woman before pressing a fingertip to the camera lens, in order for it overlap with the artist's body on the monitor, virtually touching her. In these works, the domestic setting becomes a laboratory for the disciplining power of media technologies.

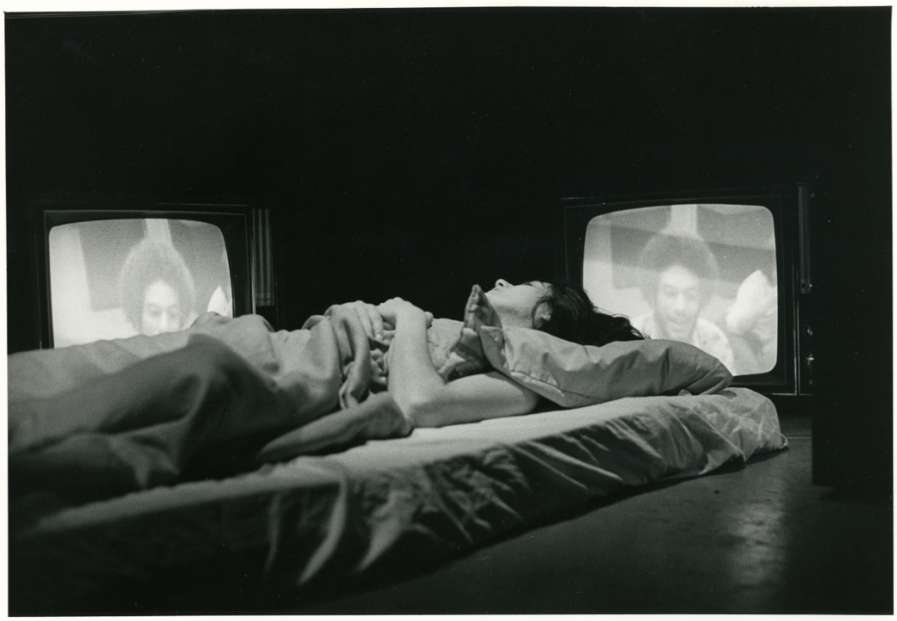

Figure 3–4. *Sleep Performance* (Rita Myers, 1974, 6 hours, b&w, sound). Synapse Cable Network, Syracuse University, Syracuse, New York. With permission of Rita Myers.

5. Fragmented Bodies: Feminist Appropriations of Horror

While all these works probe the nexus of closed circuits and female surveillance, a subsequent group of videos reappropriates the horror genre's emerging tropes to interrogate the entanglement of surveillance, the closed circuit, and the home. Elaine Shemilt's *Doppelgänger* provides a salient example. The setup recalls *Representational Painting* and *Instructions No. 1*:[7] after an opening close-up

7 The resemblance between Shemilt's and Iveković's works is even more striking considering that they were not aware of each other's existence, due to the overall isolation experienced by women artists at that time (Shemilt, e-mail to author, January 10, 2026).

of the artist's eyes, Shemilt is shot in three-quarters from behind, her reflection caught in a mirror in front of her. The familiar routine of applying a thick, pale foundation is repeatedly interrupted by static shots of her face overlaid with a projected skull, while a clinical, impersonal voiceover (apparently from a psychiatric session) speaks of schizophrenia and split personality. Domestic rituals of feminine self-fashioning are thus shadowed by disturbing images and voices. At a key moment, Shemilt picks up a dark marker and begins to trace the contours of her face directly onto the mirror. Crucially, she averts her eyes from her reflection in the mirror and turns her gaze to the closed-circuit monitor, aligning her drawing with the video image on the monitor, reconstructing her features according to the external point of view fed back by the circuit.[8] The self-portrait thus becomes a technical reconstruction, a drawing that follows an external gaze. The voiceover invokes prison and marriage—respectively a paradigmatic disciplinary institution and a social discipline central to the construction of female subjectivity. When the drawing is complete, Shemilt exists the frame, leaving behind her ghostly double. The camera proceeds to isolate Shemilt's body parts, displayed one after the other—head, breast, profile, an x-ray of a hand—turning the camera into a site of visual dissection. Finally, the drawing itself disappears. Shemilt thus stages the insanity induced by a monitoring gaze: the split between self-perception and the Self as represented by someone else. Horror's imagery of the fragmented, abject body (Kristeva [1980] 1982; Arya 2016) becomes a language for surveillance's analytic violence on women's bodies.[9] A few years later, VALIE EXPORT's *Syntagma* similarly renders fragmentation in a multimedia key: captured by surveillance cameras and laid out as if on an operating table, the female body becomes "the epitome of objectification, an itemization of the goods: arms, legs, shoulders, breasts, faces" (Mueller 1994, 184). Both horror and feminist practices engage with the ways the female body is surveilled and fragmented: horror turns this into the spectacle, feminism into critique. This critical examination is even more compelling considering that it anticipates the way the subject is today apprehended and assessed by self-monitoring technologies: instead of being divided into discrete body parts, the self is now a "dividual" (Deleuze [1990] 1995), endlessly subdividable into body data (Schüll 2016) that can be mapped and controlled.

8 For a description of the so-called "Venus effect" in this video art work, see Dalmasso and Grespi (*infra*).

9 In October 2016, the artist performed a live reenactment of the video performance, titled *Doppelgänger Redux*, curated by Laura Leuzzi and Adam Lockhart in the context of their project *EWVA | European Women's Video Art in the 70s and 80s*. As well as allowing the audience to understand how Shemilt utilized the technical features of analog video equipment (Leuzzi 2019), the 2016 performance shed new light on the possibility of resisting the patriarchal regimes of visibility that structure female (self-)representation (Galimi 2025).

Figure 5. *Possibly in Michigan* (Cecelia Condit, 1983, 11:40 min, color, sound). Video still. Image copyright of the artist, courtesy of Video Data Bank, School of the Art Institute of Chicago.

If *Doppelgänger* and *Syntagma* expose the female body as fragmented under the surveillance gaze, Cecelia Condit's *Possibly in Michigan* reclaims that same apparatus through irony and excess. This twelve-minute narrative video stages and then disrupts the gendered logic of the closed circuit so far articulated, transforming horror's tropes into a grotesque and subversive performance. At the same time a horror video and a musical, its dissonance also emerges from the coexistence of three overlapping vocal registers, a female chorus, a sung dialogue between the two female characters, and Condit's own detached voiceover. The work is set in an American shopping mall, where the two female protagonists, Sharon and Janice, are both consumers and commodities, as they are stalked by a masked man while shopping for perfume. The camera repeatedly frames them from above, imitating a surveillance camera, or through apertures that mimic keyholes, reproducing voyeuristic and surveilling points of view. Significantly, as the stalker approaches their home, the women appear on a surveillance monitor representing his gaze (Fig. 5): once again, their bodies are fragmented, captured, and analyzed. The domestic space thus becomes a

continuation of the mall's visual economy, both governed by circuits of surveillance and consumerism. In the climatic sequence, Sharon and Janice kill their pursuer, and then dismember, cook, and eat his body. The gesture collapses the relationship between gaze and consumption: the man, once the active subject of the gaze, becomes the edible, fragmented object, and this reversal is visually sanctioned by the disappearance of surveillance itself. Once the man is dead, the women are no longer captured by any monitor, and their image gradually dissolves into smoke. The closed circuit is momentarily broken, and with it, the visual order that makes female subjectivity perpetually visible.

6. Conclusions: Feminist Afterlives and the Global Circuit

A final and more recent example allows us to conclude this feminist excavation into one of the roots of the critical thought on surveillance, in which generalized algorithmic surveillance is complemented by a postfeminist discourse that enhances the normalization of a high level of self-surveillance behind the rhetoric of choice and freedom, equating women's power with the cultivation of an attractive body (Harvey 2019). Miranda July's *The Amateurist* is a video that simultaneously thematizes female surveillance and self-surveillance. In this unsettling work, a woman identified as a "Professional Woman" observes another woman, the "Amateur", through a surveillance monitor. The Professional issues commands to the Amateur via the monitor, in the form of letters and numbers that the latter must reproduce adapting the posture of her body into the shape of the letter or number required (Fig. 6–8). Both characters are played by July herself, underscoring the internalization of surveillance and the doubling of subjectivity it entails. The Professional explains that she watches these images every day, all day long, and has done so for the last few years. The camera occasionally widens to include the surveillance feed itself, revealing that the Amateur is almost naked, in a visual gesture that implicates us, too, as voyeurs and participants in the act of watching. July thus performs an unsettling collapse of subject positions: the surveillant and the surveilled are one and the same, and the viewer becomes complicit in the disciplinary loop. Throughout the video, the Professional attempts to control and measure what ultimately is her own image on the screen, translating the body into a quantifiable and programmable form, anticipating the link between power, control, and quantification that characterize today's "metric culture" (Beer 2016; Ajana 2018). The woman assigns a number and a spatial coordinate, then instructs, "move," prompting the Amateur to trace the number with her body. "She has no idea what she's doing," the Professional says, "but I can help her." In the concluding line, the Professional remarks that the Amateur wakes up each day asking, "What should I do today?," but if she were a Professional, she would know that this decision has already been made for her. Through this ending, *The Amateurist* reflects

on the disciplining of femininity while also anticipating the logics of tracking, monitoring, and algorithmic governance that define contemporary telepresence, where monitoring takes place constantly, in real-time, corresponding to the entire life span (Toschi 2024), and the line between control and self-control is blurred as individuals voluntarily choose to quantify themselves, "actively turning themselves into projects of (self-)governance and surveillance" (Ajana 2018, 3). July's performance collapses the temporal distance between 1990s video art and today's media infrastructures, suggesting that returning to the paths traced by feminist video practices can help us better understand the conditions of our present mediatized subjectivity.

Figure 6–8. *The Amateurist* (Miranda July, 1998, 14:00 min, color, sound). Video stills in linear succession. Image copyright of the artist, courtesy of Video Data Bank, School of the Art Institute of Chicago.

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Telephonic Presence: Marta Minujín's Early Works*

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Abstract

This chapter analyzes the works at the intersection of telematic art and expanded cinema by Argentine artist Marta Minujín (1943–), who between 1966 and 1968 created specific tele-visual installations that shed light on the role of individual media in the production of forms of remote presence. Marta Minujín achieved celebrity status very early on in her homeland but only in recent years has her significant and broad contribution to contemporary art been fully recognized at international level. Her evident affiliation with the hippie scene of the 1970s long seemed sufficient to frame her work, yet her practice in fact engages in sophisticated experimentation with media technologies, from radio to computers, which places her in dialogue with the major media artists of her time. In particular, the installation *Minuphone* (1967) grasps the archaeological centrality of the telephone in the journey towards the technologies of telepresence, recognizing the booth as a *dispositif* for translating real presence into virtual presence. Due to its ability to bridge past and future, reinterpreting an old medium and prefiguring the scenarios of the future, Minujín's work constitutes a valuable tool for media archaeology.

Keywords: Marta Minujín; Telephone; Telephone Booth; Live Streaming

Abstract

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Questo capitolo analizza le opere all'incrocio tra arte telematica e cinema espanso dell'artista argentina Marta Minujín (1943–), che tra il 1966 e il 1968 crea una serie di installazioni tele-visuali che illuminano il ruolo dei singoli media nella produzione di forme di presenza a distanza. Marta Minujín ha raggiunto molto presto la fama in patria, ma il suo ampio e significativo contributo all'arte contemporanea è stato riconosciuto pienamente a livello internazionale soltanto negli ultimi anni. La sua evidente appartenenza alla scena hippie degli anni Settanta è sembrata a lungo una chiave di lettura sufficiente a inquadrare la sua opera, che in realtà contiene anche una sofisticata sperimentazione sulle tecnologie mediatiche, dalla radio al computer, tale da metterla in dialogo con i più celebrati media artist del suo tempo. Grazie alla sua capacità di congiungere passato e futuro, reinterpretando vecchi media e preconizzando scenari futuri, l'opera di Minujín rappresenta un prezioso strumento per la mediarcheologia.

Parole chiave: Marta Minujín; Telefono; Cabina telefonica; Trasmissione Live.

1. Discovering the Media Circuit

Marta Minujín, born in 1941 in Buenos Aires, grew up in a wealthy and well-educated family—her father was a physician, while her mother was a housewife, poet, pianist, and traveler, according to one of the artist's principal biographers (Villa 2010). Her artistic vocation likely stemmed from her paternal grandfather, who worked in garment manufacturing—textiles later becoming one of her most recurrent artistic materials, alongside mattresses. She studied at several art schools in Argentina and was already recognized as a painter at the age of sixteen, holding her first solo exhibition in 1959. In the early 1960s she received a fellowship to travel to Paris, where she began working with galleries and came into contact with major contemporary artists and artistic currents, from Andy Warhol to Fluxus. She returned to Buenos Aires in 1964, winning the National Prize at the Di Tella Institute. Using half of the prize money, she created her first large-scale work, *El Batacazo* (1965), while the remaining funds supported her first trip to the United States. There she entered the core phase of her career, gaining significant recognition and starting to travel regularly between the United States and Argentina. Her artistic trajectory was rich and diverse, always accompanied by a strong presence in the national media landscape. Minujín was, in effect, a television star, a factor that likely undermined her credibility in the eyes of critics, already skeptical of the more spectacular and flamboyant aspects of her work—judged, by Claire Bishop for instance, as overly sensationalist (Spencer 2020, 83).

This article focuses on the onset of her media experimentation, which took place primarily at the Howard Wise Gallery in New York, the ideal platform for her early projects in telecommunication.

Experimentation with media marked a turning point in Marta Minujín's artistic trajectory. Toward the end of the decade, a media art scene also emerged

in Latin America—with artists such as Roberto Jacoby, Eduardo Costa, Raúl Escari, and Juan Risuleo, influenced by the thinking of Oscar Masotta and revolving around the Torcuato Di Tella Institute in Buenos Aires (Giunta [2001] 2007; Mazadiego 2021); it was in this context that Minujín was encouraged to work with media technologies, particularly radio, television, and the telephone, and to join the "Grupo Arte de los Medios."

Between 1966 and 1968, she produced a cycle of three works focused on live transmission, aimed at "opening up" television broadcasts by involving different types of audiences and, in one case, to simulate the interconnection of studios across Europe and the Americas. These works are *Simultaneidad en simultaneidad* (Buenos Aires, 1966), *Circuit – Super-Heterodyne* (Montreal, 1967), and *Minucode* (New York, 1968). The most complex challenge was naturally the engagement of spectators, who needed to be reached, selected and integrated into the artistic process itself. To this end, the artist experimented with social research methodologies, employing questionnaires, as well as with computational procedures, exploiting the capacity of early computers to process data rapidly. Moreover, this series of works introduced forms of theatricalization of television images that generated some of the earliest media environments, achieved through large-scale film projections on walls, from floor to ceiling—pioneering for the time. Some of these telematic works were deliberately conceived without fully realizing the promised technological outcomes, thereby functioning as *dramaturgies of simultaneity and connection*, questioning the ground of tele-mediated culture and significantly shaping its imaginary—now understood as an integral component of a medium, to the point of influencing what can be considered its very moment of emergence (Kluitenberg 2006).

This is the case of her most famous work, *Simultaneidad en simultaneidad*, conceived as part of the *Three Country Happening* project, which sought to exploit the newly launched communications satellite, Intelsat I (whose nickname was Early Bird, in orbit since 1965—see Parks 2005). *Simultaneidad* was intended to take part in an intercontinental media event, linking simultaneously the media happenings taking place in three different locations: New York, where Allan Kaprow was active; Berlin, at Wolf Vostell's TV station; and Buenos Aires, at Minujín's, as illustrated in the map drawn by Vostell in April 1966 to serve as the Happening's flyer (Fig. 1). However, the Argentine happening was the only one that was carried through to the end, and the cross-transmission of the three events was ultimately realized through simulation.

Included in the spaces of this installation were the homes of selected Argentine spectators, which were transformed into media environments, receiving and intertwining multiple signals. In Buenos Aires, around a thousand people agreed to tune in to Canals 11 and 13 and to switch on the Municipal and Libertad radio stations at midnight on 24 October 1966, in order to be "invaded" (as Minujìn herself declared) by a multimedia flow of communication

reaching them through their television screens, as well as via phone calls, letters, and telegrams delivered to their doors. On air, Minujín announced that she was

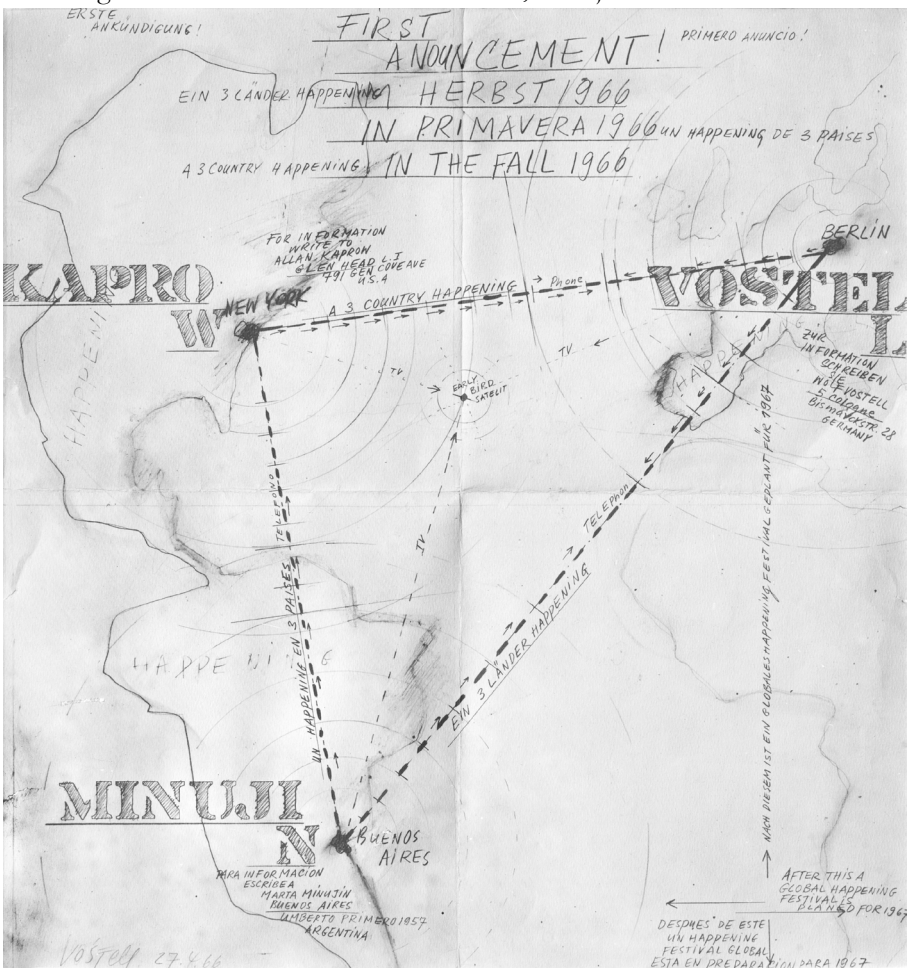

Figure 1. Wolf Vostell, Poster for *Three Country Happening*, 1966. © Marta Minujín. Courtesy of Marta Minujín's Archive and kurimanzutto, Mexico City / New York.

communicating with Vostell and Kaprow via radio and telex: a male voice could be heard speaking in German, while Kaprow was "present" in the form of a telegram that Minujín read aloud.

Their descriptions of the American and German happenings simultaneously became (prerecorded) images: five girls stuck pins into a slaughtered cow, supposedly in New York, while people on the streets of the "wannabe" Berlin licked cream off a car. These actions were visible both on domestic television screens and on a row of monitors set up in the Di Tella Institute theatre, where a group of spectators, selected by the artist for their "mediatic value," followed

the program. It was at once a collective and an individual viewing experience, a highly forward-looking hybrid model: each participant was in front of their own screen while holding a radio in hand. This special audience was made up of sixty prominent figures from the media world—journalists, critics, film stars, psychoanalysts, politicians, and athletes (Pella 2010, 74) —who, a week earlier, had been filmed in the same location wearing the same outfits (Fig. 2), becoming part of the images transmitted and creating the impression of a two-way live broadcast. On the day of the event, the VIP spectators, returning to the same site, found themselves immersed in footage and slides that included them—a multiple projection setup using nine devices to fill the four walls of the auditorium. In what constitutes one of the earliest live media environments, the guests were simultaneously viewers and performers of a telecast of images simulating simultaneity. Finally, the last segment of the program showed three personalities, chosen from the Di Tella auditorium group, in their own homes as they received telegrams and phone calls, or were contacted via radio. At this point, Minujín's voice was muted, and her discourse could be followed in written form in the day's newspaper—which spectators who had followed the artist's instructions were expected to have at hand.

Figure 2. Documentation of *Simultaneidad en simultaneidad*, Instituto Torcuato Di Tella, Buenos Aires, 1966 © Marta Minujín. Courtesy of Marta Minujín's Archive and kurimanzutto Mexico City / New York.

Viewed in light of later telematic happenings, such as *Hole in Space* by Kit Galloway and Sherrie Rabinowitz (1980)—a media event that genuinely connected New York's Lincoln Center and Los Angeles' Broadway Store via a satellite link, transforming a large screen into a "hole" where space and time collapsed—*Simultaneidad en simultaneidad* might appear as a failure, or at least as an experiment in "juxtaposing truth and falsity," as critics observed (Kirby 1968, 148). On the contrary, recent re-readings have shown how this failure can be seen as the very end of the experiment, programmatically arranged as pre-recorded communication to play on the myth of the global village. Nina Wexelblatt (2025) crucially interprets *Simultaneidad* as a critical counter-narrative, or as an experiment in counter-information and resistance to the political pressures that the three artists faced in their respective countries—pressures for which the media themselves often served as instruments.

In this veiled but ultimately subversive approach to telecommunication systems, *Simultaneidad en simultaneidad* constructs telepresence as a dimension arising from the synergy of all media: radio, photography, cinema, television, and print. And simultaneity is presented as a striking blend of reality and simulation, live and recorded, presence and representation. Minujín's specific approach to the intercontinental happening consisted in coordinating the media apparatus as a whole and shaping telepresence as a dimension collectively produced through countless operations linking multiple media signals—switching radio or TV stations, reading the newspaper, opening a telegram, answering a phone call, and, for those seeing themselves on the small screen, observing the behaviors and gestures of their mediated self.

This final aspect is crucial: in *Simultaneidad en simultaneidad*, the practice of staging oneself while monitoring one's video feedback on a screen connected to the filming camera—a topos of 1970s closed-circuit video art (Krauss 1976), reinterpreted by women artists (De Rosa's and Galimi's essays, *infra*), and a foundational configuration of today's tele-media (Dalmasso and Grespi, *infra*)—is essentially imagined and simulated through film footage, in a nested "Russian doll" structure that encapsulates a cinematic installation within a television broadcast. Cinema, video art, and telematic art thus enter into dialogue, to question a dimension that was becoming increasingly central in the media culture of the time—and remains so today: mediated presence.

Minucode, a video installation presented from 27 May to 8 July 1968 at the Americas Society in New York (then the Center for Inter-American Relations), also included Super 8 film projections later installed within a media environment. In this case, participants were selected through a questionnaire that asked them to self-classify according to profession and leadership ability. The questionnaire was published on 7 May in *The New York Times*, *The Wall Street Journal*, *Women's Wear Daily*, *The New Republic*, *The Village Voice*, and *East Village Other*. The collected data were subsequently processed using a computer to arrive at a

final selection—a highly unusual procedure at a time when computer use in art was practically unheard of.

Between 20 and 23 May 1968, the selected participants attended four cocktail parties, each dedicated to members of a specific profession (economists, fashion professionals, artists, politicians), during which they were asked simply to interact under the gaze of six cameras, capturing them from multiple angles. On the day of the event, the previously filmed subjects were called to revisit the same spaces, now transformed by their giant-scale images projected on the walls, making their expressive and gestural capacities fully visible. Footage from the four gatherings was edited into ten-minute sequences, aimed at comparing social codes of behavior and at revealing the common denominator that constructs fame and success—the focus of Minujín's research at the time.

Cinema here functioned as the medium capable of bringing out Maussian techniques of the body, which Mauss himself had already recognized in the 1930s as being conditioned by the media (Mauss [1936] 1979). Yet it was the televisual principle of the closed-circuit setup, which the installation mimicked, that enabled forms of self-analysis.

This point was, in fact, at the core of *Circuit Super-Heterodyne*, created the previous year but theoretically more complex than the preceding works. In 1967, at Fordham University, Minujín met the media theorist of the moment, Marshall McLuhan, and showed him documentation of *Simultaneidad*, intending to continue her research along the lines of his theories. She effectively did so by participating in the Pavillon de la Jeunesse at Expo 67 in Montreal, where she created *Circuit Super-Heterodyne* in April of that year, in collaboration with Howard Swarcer.

Even in this installation, the artist relied on local media for participant selection: invitations were issued through newspapers and selections were already made using computational tools. The thirty chosen participants, divided into groups of ten according to physical characteristics such as sex, hair color, and height, were then massively mediated through photographs, film, and voice recordings, which were ultimately broadcast on television. In parallel, a second action took place in a TV studio, under the title of the *Concierto de famosos*, which represents the most advanced segment of her work on media and social behavior. In this segment, eight celebrities performed in a television studio, where an interplay was established between their mirror image and the image broadcast live on the screen. Anticipating the central concept of peter campus' *Interface* (1972) (see *infra*) —that is the comparison between an electronically transmitted CCTV image and the specular reflection—Minujín worked on the transformation of the real self into a virtual self, laying the groundwork for an experience of the world in telepresence.

2. A Media Ar(t)chaeological Work: The *Minuphone* (1967)

After the series of installations reinterpreting television circuits, Minujín shifted her attention to the telephone—more precisely, to the public yet intimate space in which calls made outside the home typically occurred: the telephone booth. *Minuphone*, a work created in 1967 and first exhibited the same year at the Howard Wise Gallery in New York, is devoted to this capsule of telepresence, carefully customized to incorporate photography, video, and sound playback. For this reason, it stands among Minujín's most technologically complex works, being developed in collaboration with the Danish engineer Per Biorn of Bell Labs (today Nokia Bell Labs)—the historic research laboratory which originated from the workshop of the telephone's inventor, Alexander Graham Bell, and which later became a leading center for electronic innovation and telecommunications, credited with major discoveries such as radio astronomy, the transistor, the laser, the photovoltaic cell, the charge-coupled device (CCD).[1]

The construction of *Minuphone* took place under the aegis of Experiments in Art and Technology (E.A.T.), founded by Bell Labs developers Billy Klüver and Fred Waldhauer together with the artists Robert Rauschenberg and Robert Whitman with the aim of fostering dialogue between art and engineering and enabling works that would have been unthinkable outside such an alliance. Minujín was one of the few women in E.A.T. to take an active role in this legendary phase of intense techno-artistic experimentation.

The *Minuphone* looked like an ordinary 1960s telephone booth, complete with a metal frame and transparent acrylic wall panels, yet the user entering it experienced far more than a simple phone call (Fig. 3). About two meters high, it was accessed through a folding door and positioned thirty centimeters above the floor on a wooden platform, which featured a rectangular opening directly beneath the base of the booth. A television monitor was installed in this cavity and covered with a transparent panel.

The work appeared as a simple, playful object but was in fact a hypermedium of considerable technological and conceptual complexity. Its functioning can be reconstructed: through contemporary reports by users and journalists preserved in the archives of Electronic Arts Intermix (EAI) in New York; through analyses contained in the major catalogues of Minujín's exhibitions; through the observation of the iconographic documentation; and through interviews with the artist published in the catalogue *Minuphone 1967–2010* (Longoni and Carvajal 2010). Finally, reference can be made to its recent reinstallation as part of the exhibition *Sensing the Future* (LUMA, Arles, May 2025–January 2026), where, however, only the architectural structure was displayed, not its operational system.

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Figure 3. Sketch for *Minuphone*, 1967. © Marta Minujín. Courtesy of Marta Minujín's Archive and kurimanzutto, Mexico City / New York.

In summary, the experience it offered unfolded as follows: upon stepping inside, the user encountered a series of instructions conveyed through illuminated texts inside the booth, requiring specific interactive gestures capable of triggering technologies for the production and transmission of sounds, images, and environmental stimuli. A push-button telephone was mounted on one of the walls, housed in a wooden box at the height of a standing visitor's hands. Once the door had fully closed, a light indicator prompted the user to dial numbers; depending on the combination entered—and also on the tone of the user's voice—different effects were produced, ranging from gusts of air emitted from vents in the sides or the base, to flashing lights of varying intensity and color, to a shower of confetti released from above the user's head, and finally to the activation of a mechanism that filled the booth with green smoke. Additional visual effects animated the walls, composed of two acrylic sheets whose interspace was infused with colored liquid—bright green or dark violet—that spread across their entire surface. At the climactic moment of the experience, the illuminated instruction "look down" appeared, corresponding to the activation of a camera and the live transmission of its input to the monitor installed on the floor. Finally, a light signal instructed the user to "stand still" at two different moments: first, when a spotlight embedded in the floor illuminated by the

Figure 4. Postcard depicting *Minuphone*, 1967. © Marta Minujín. Courtesy of Marta Minujín's Archive and kurimanzutto, Mexico City / New York.

participant's body, projecting its shadow for about ten seconds onto a sheet of white paper released through a narrow slot; and second, when a bright light was projected from the ceiling onto the user's face, allowing the Polaroid camera installed inside the booth to take a photograph of the visitor while on the phone.

Within this sequence, the actual telephone call also played a crucial role, as it was a real call lasting up to three minutes and modulated by two sound effects: the echo of the conversation produced by a reverberator, and an effect consisting in recording and replaying a fragment of the dialogue a few seconds later. Upon exiting the booth, the user received the Polaroid picture to take home as a souvenir of the experience (Fig. 4).

The *Minuphone* was fitted with an electronic black box—not yet a digital electronic memory like those used in computers and no longer a purely mechanical mechanism—which, however, was not entirely "black," since it was exposed to the public. Visitors could observe the device in operation while watching others undergo the experience, thanks to a transparent acrylic panel that revealed the circuits positioned directly in front of the booth (Fig. 5). The analogue electronic control circuit was built with amplifiers and power sources and required a touch-tone telephone (with a keypad) rather than a pulse-dial phone (with a rotary dial) – this according to Longoni and Carvajal's analysis of Biorn's project (2010, 20).

Contemporary criticism framed the work mostly as a psychedelic utopia, prefiguring the artist's forthcoming hippie turn and thereby significantly delaying recognition of Minujín's sustained and sophisticated engagement with media technologies. In *Minuphone*, the user is transformed into an audiovisual signal and prompted to confront their teletransmitted image from a highly unusual

perspective—from below (Fig. 4). The closed-circuit system embedded in the booth relies on an alignment between camera and monitor, both positioned at the visitor's feet. This configuration associates video with the shadow, a quasi-natural image marked by the estrangement of perceiving oneself in a projection that adheres to the body yet does not fully coincide with it. During the experience, a shadow is deliberately produced on a sheet of white paper, and the original outline of the work also envisioned a play of reflections through the use of mercury: the metal would rise between the acrylic walls of the booth, producing a silvered surface that turned the walls into mirrors in which users could see their reflected image. This idea was ultimately abandoned because mercury proved too dangerous, yet it remains significant for understanding the imaginary component of the machine. Minujín was clearly experimenting with the video image in ways closely aligned with those of the pioneers of video art, who would be largely concerned with the difference between the screen and the mirror (see Dalmasso and Grespi, *infra*).

By extending closed-circuit video toward multisensory and immersive experiences, *Minuphone* interprets telepresence as a conversion between domains: from the real to the virtual, from the self to its mediation, from a concrete place to all possible places, and from communication to presence.

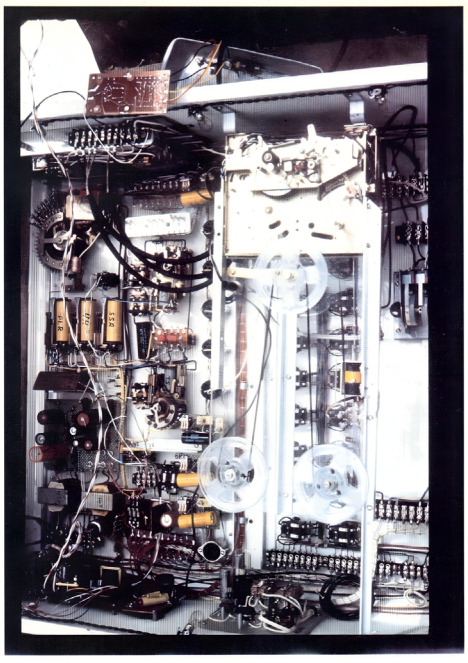

Figure 5. Switchboard in the Minuphone pedestal, New Jersey, 1967 © Marta Minujín. Courtesy of Marta Minujín's Archive and kurimanzutto Mexico City / New York.

3. The Telephonic Presence

Marta Minujín's *Minuphone* prefigures the most technologically advanced forms of contemporary telepresence, linking them to the experiences of closed-circuit video art. While the earliest experiments in media art exploring telematic presence were characterized by the search for a shared, multidirectional space of tele-perception (as highlighted in Dotto, Soldani, *infra*), contemporary extended-reality technologies have placed greater emphasis on simulating the bodily presence of the subject in the "elsewhere" reached through tele-media. Much of this experimentation has focused on producing an illusory self—intangible yet visible—that maximizes possibilities for embodiment and can interact with virtual environments. In this regard, the historical experiments of early video art represent a crucial laboratory for techniques of self-mediation, with sustained reflections on the user's face and body transmitted via CCTV and contrasted with their mirrored images.

Unlike the telegraph, the telephone was the first modern form of long-distance communication not based on the transmission of a signal to be interpreted according to a shared code, but rather on the direct mediation of the communicator. The transmission of the interlocutor's voice produces a phantasmic sense of presence and underscores the sharing of a common temporality—a *now* that is simultaneously a mental state and a physical parameter. For this reason, the telephone represents a genealogically pivotal device, as Minujín intuited in consolidating all media experiences within the space of the booth. Even today, the mobile phone remains the locus in which the entire history of media collapses.

In his article "Heard over the Phone" (1991), Tom Gunning analyzes the ways in which early cinema staged telephone conversations, often depicting situations in which a father or husband listens over the phone to an attack on his family, feeling present despite being at the other end of the line, yet unable to intervene—a scenario dramatized countless times in thrillers up to the present day. In the films and Grand-Guignol plays Gunning examines, the effectiveness of the dramatic climax relies precisely on the tension between an unbridgeable real-time distance and the sense of presence generated by the then-new technology, as highlighted in dialogues such as: *"You are close to me—I hear the slightest inflection of your voice—almost every movement—I can very nearly see you—yes, I see you…"* (Gunning 1991, 195). The leap from the satisfaction of hearing a voice so clearly that it feels as if the speaker can be seen, to the need to create conditions for concretely seeing them on some kind of screen and to overcome the so-called "telephonic uncanny" (Durham Peters 1999), occurs as early as the late nineteenth century, as Doron Galili demonstrates in his *Seeing by Electricity* (2020). Both men of learning and ordinary people immediately imagined that such a possibility could become real, giving it shape within popular

visual culture—through illustrations of imaginary machines and through tales of an "electric distance-seeing machine" being experimented on simultaneously by Alexander Graham Bell, the inventor of the telephone, and by Nikola Tesla (Galili 2020, 18). Ultimately, these speculations apply the following logic: just as the telegraph's secondary effect—the transmission of sound—gave rise to a new medium, the telephone, so experimentation with the telephone could lead to a new technology exploiting the electrical circuit for the transmission of images.

Placing television within the same lineage as the telephone was obvious at the end of the nineteenth century, whereas today this connection seems more counterintuitive, given that the history of the television medium has been dominated for roughly ninety percent by broadcasting—the one-to-many transmission model, more akin to cinema—rather than the reciprocal exchange of transmission and reception, of speech and listening, which is characteristic of the telephone. Drawing on the research of Siegfried Zielinski (1999) and William Uricchio (2004), Galili illuminates the link between telephone and television by reordering the landscape of late nineteenth-century technological creativity, demonstrating that the development of electronically generated moving images proceeded entirely independently, though in parallel, to that of photographically based moving images.

> […] out of the social, cultural, and intermedial context of modernity, two distinct forms of moving image media emerged: one for the photographic inscription and reanimation of pictures, and one for the electric transmission of images at a distance. Such a history, in turn, ought to establish television's place in a number of alternative lineages, including ones that fall outside the realms of visual media—namely, those of the history of electrification, of signal communication systems like the telegraph and the telephone, and of networked technological configurations. (Galili 2020, 4)

Tele-transmitted images along electrical wires were already a concrete technological possibility in the Bell Laboratories as early as the 1930s. However, their use was experimented with for more than forty years and concluded in 1974 without any specific prototype gaining market dominance. Lori Emerson's seminal work on network archaeology also examines the case of the videophone, which enjoyed relative popularity in the 1960s and most likely derived from the Bell Laboratories' *ikonophone* project. The latter was a system in which both speakers were able to hear each other and see images of each other; it was already tested by AT&T in the 1930s. Of particular interest for the purposes of this article is that this videotelephonic modality was conceived as an extension of telephony into public spaces, and thus implied the construction of booths "about the same size as an ordinary telephone booth," according to *The New York Times* (Emerson 2025, 111). In reality, these systems proposed a different

mode of use—not standing but seated on a swivel chair before a screen illuminated by a bluish glow, thus anticipating the later domestic model of broadcast television consumption. The visual telephone —effectively a form of two-way television and a precursor to contemporary videoconferencing platforms— was also introduced in Germany and relaunched after the Second World War in various contexts under the name *Picturephone*. Lori Emerson describes the seven booths installed at the 1964 New York World's Fair, perhaps the moment of their greatest public visibility: inside each booth stood an oval tube housing a small video camera and a screen, both connected to the telephone keypad.

Seeing and speaking at a distance thus emerges as a core nucleus of telepresence—an experience that developed around the telephone and, crucially, around the structure that housed it, creating a bubble which separated the speakers from their surroundings and allowed them to travel down through the wires.

4. The Whole World (and the Other World) Through a Wire: The Telephone Booth

The 1960s represent the period of greatest popularity for the telephone booth, which nevertheless has a much longer history, spanning approximately a century and a half. This final section aims to clarify its nature as a *device*, while at the same time demonstrating the potential of this object for media-archaeological research, and laying the groundwork for future excavation.

The telephone booth was designed in the 1880s almost simultaneously in the United States and Germany, and was initially installed in indoor locations, typically hotels, banks, or offices. An American patent dated 1883, signed by Richard Busteed, describes a "telephone cabinet" containing a desk and equipped with wheels in order to move it from place to place. Busteed envisioned a movable workstation organized around the telephone as its central element (one can see a pen and inkwell on one side and a large wall-mounted apparatus on the other (Fig. 6), an idea that was undoubtedly anticipatory of developments that would only materialize much later, with the emergence of the first modems.

The model that gained diffusion toward the end of the nineteenth century, however, typically involved a standing user, as in the case of the German *Telefonzelle*,[2] inaugurated in Berlin as early as January 1881. The earliest attestation of such structures appears to be a woodcut from 1878 depicting a telephone booth in operation in Chicago (see Hebenstreit and Toyka-Seid 1878).

The payment method was initially similar to that of prepaid cards used before the introduction of mobile phones: users purchased a "telephone ticket" (Schörle 2019, 17) and entered the booth much as one would enter a cinema,

2 The *Telefonzelle* was distinct from the *Fernsprechkiosk*, which did not involve an architectural enclosure but only a wall-mounted station.

including the fact that they were allowed to remain inside only for a limited period of time.

The history of the telephone booth is primarily a material history marked by two major turning points: the introduction of the coin-operated system and the replacement of wood—of which early booths were initially constructed—with glass. The first change made telephone use more practical, greatly increasing the public usage of booths; the second enabled their installation in open spaces.

The coin-operated system was introduced in 1899 through a patent by the American inventor William Gray, whose payphone design relied on a deposit mechanism monitored by an operator at the other end of the receiver. The operator listened for the sound produced by the coin striking a bell housed in the payment box inside the booth, and released the line, if the sound was judged to correspond to the required amount. This more practical system, together with the twentieth-century growth in the number of telephones installed in private homes, encouraged the spread of telephone booths across Europe and the United States, particularly in locations such as railway stations, school entrances, and civic buildings.

Outdoor payphone booths became a recognizable element of the urban landscape only in the 1950s, when glass replaced wood as the preferred construction material, being less susceptible to damage and more resistant to adverse weather. In Milan, the first outdoor booth was installed in Piazza San Babila in 1952 (Mastroianni 2022). Toward the end of the decade, the first drive-up payphones also appeared—installed at strategic locations that allowed travelers to call home—and around 1966 they were equipped with dial-tone service, enabling free emergency calls.

Thus, by the late 1960s, when Marta Minujín created her *Minuphone*, telephone booths were experiencing the height of their cultural and technological prominence.

These structures emerged from the practical need to create isolated cells in which one could concentrate while being shielded from surrounding noise; in this sense, they appear to belong to the genealogy of "protective media" (Casetti 2023). The telephone booth functioned as a device, much like the cinema auditorium: it compelled users to adopt a specific posture—holding the receiver to the ear while allowing themselves to be absorbed by the conversation.

With its relocation to outdoor environments, its medial dimension became even more pronounced. The transparent walls framed the surrounding landscape, creating a mediated distance, and the city itself became a spectacle—moving images to which the audio track arriving through the receiver could be mentally synchronized. Its coin-operated activation also made it comparable to the coin-operated machines of the Penny Arcades (Huhtamo 2005), and, like these, it came to be associated with a highly specific imaginary.

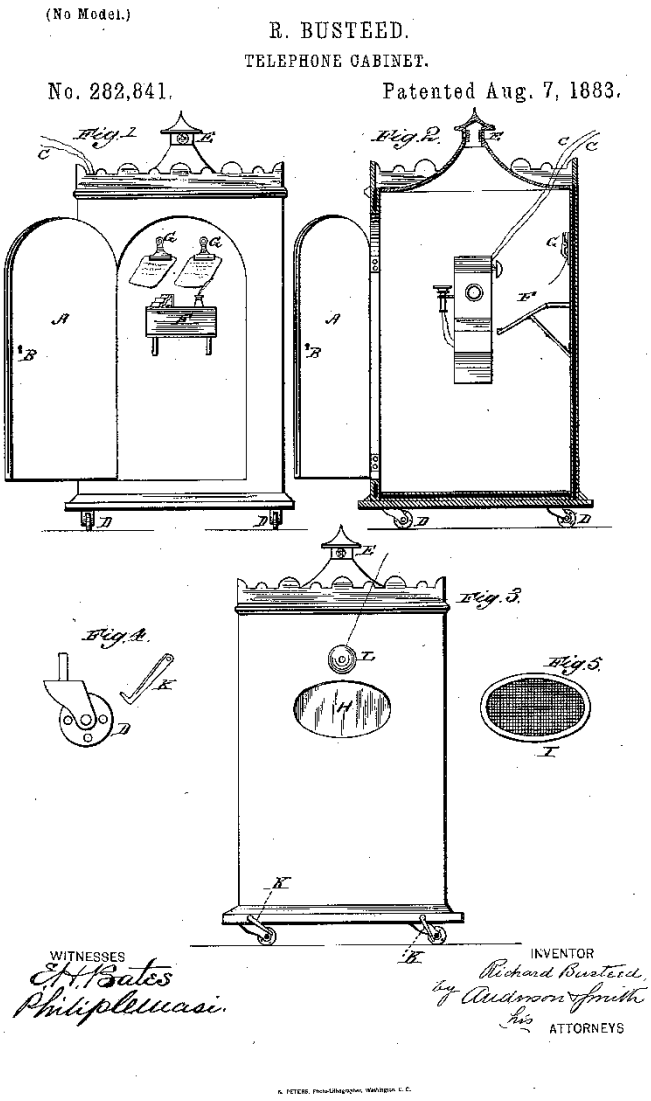

Figure 6. Richard Busteed's project for the Telephone Cabinet, 1883. Patent. Public domain.

This imaginary was not so much that of the interactive machine as that of the transformative environment, which emerges conspicuously in popular culture during the 1930s: the telephone booth hosts the famous metamorphosis of Clark Kent, who seeks a secluded yet rapidly accessible space within the crowded metropolis in order to remove his civilian attire and reveal the costume of Superman, seemingly worn like a second skin.

The imaginary of the telephone booth was first explored by Ariana Kelly (2015), who examined its literary and cinematic representations to reveal how this architecture shaped notions of privacy and introduced a distinct style of communication and social interaction. Kelly's volume illuminates the intertwining of historical, cultural, and political issues raised by this object, while simultaneously prompting further inquiry—particularly from a media-theoretical perspective.[3]

It is particularly relevant here to note that the telephone booth represented the threshold beyond which tele-mediated interaction became a device of control. Within the domestic or workplace environment, the telephone functioned as a medium that was, in a sense, exposed to monitoring by others: parents, supervisors, colleagues. Achieving privacy at home required being physically alone or stretching the cord as far as possible from the corridor, where the device was often located, to intrude into spaces considered inappropriate—such as the bathroom or bedroom—and looking for makeshift supports for the receiver. Transgressive use of the telephone was often linked to subverting its domestic arrangement, whereas making a call in public spaces was doubly protective: it provided a sonically insulated space conducive to communication and simultaneously removed the interaction from mechanisms of surveillance and tracking.

The telephone booth functioned as an oasis of freedom in the midst of the street, a space in which one could enter a sonic flow without being recognized. Public telephones were often used to conduct prohibited conversations—for instance, the pranks of children, masters of the "anonymous" call, or extramarital conversations. Their structure, democratic if not anarchic, increasingly went along with a shabby aspect: odors, dust, and traces left by homeless people who spent the night inside. This, in turn, became one of the declared reasons for their removal toward the end of the 1990s—by which time mobile phones were already in widespread use—or for their transformation into some of the most fascinating technological relics of our era.

Since they allowed connections that were not entirely traceable, emanating voices that could not be clearly located in space, their use lends itself to explorations of the elsewhere. An unlocatable voice might even be imagined as coming from the beyond or from the realm of spirits. In this sense, the telephone booth

3 The history of the telephone booth and a part of its imaginary is also the topic of *Eine Kleine Geschichte der Telefonzelle* by Eckart Schörle (2019).

amplifies a dimension already intrinsic to the medium itself. The presentification of an absent party, introduced by the telephone, opens up a vast supernatural imaginary (Sconce 2000), which was already alive in the mind of one of its inventors, Thomas Watson, Alexander Graham Bell's research partner. Watson, a member of the Society of Psychical Research, was fascinated by the idea of using the telephone as a channel to contact the dead, holding seances in the expectation that signs from the other side could reach him through the receiver (Ronel 1989).

According to Oliver Grau, this "occult prehistory of telecommunication" has nourished contemporary telepresence media, centered on an out-of-the-body experience derived from the amalgam of three technologies: robotics, telematics, and virtual reality (2003, 279). Although the rich, three-dimensional visuality that characterizes these media invites comparison with cinema, immersive media should instead be considered in relation to telephonic-televisual technologies: both for material and experiential reasons, and because of this convergence of esoteric imaginaries grounded in the possibility of leaving the body or contacting otherworldly entities.

Today, a monument inspired by the mediatic and mediumistic role of the telephone booth exists: the *Wind Phone* (*Kaze no Denwa*), located in the town of Ōtsuchi, Japan. Ōtsuchi's *Wind Phone* is a white telephone booth with glass panels, housing a black telephone disconnected from any line and resting on a metal shelf, alongside a notebook serving as a register for visitors' signatures and thoughts. Created in 2010 by garden designer Itaru Sasaki following the death of a cousin, it was opened to the public the following year after the 2011 Tōhoku earthquake and tsunami that claimed over 15,000 lives in the Tōhoku region.

The telephone booth has represented a mediatic environment capable of encapsulating the genealogy of tele-media, constructing a sense of presence that is poised between control and freedom, political utopia and the ambiguous myth of virtuality. In the works of Marta Minujín, the telephone booth becomes an artistic object that brings this genealogy to light and invites viewers to trace it along a line that leads directly to the present.

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Being There / Being Then. Rhetoric and Poetics of Tele-Presence from Art Radio to Radio-Art

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Abstract

This essay identifies different conceptualizations of tele-presence in the discourses around radio as a mass and an artistic medium. I will first refer to the historical discourses on radio and early "art radio" to argue that broadcasting in its formative years elicited imagination of the world as resounding space. Rhetorics of presence across physical distances were alternatively conceptualized as "you are there" (i.e., being transported in another place) or "it is here" (i.e., bringing places and people into the media user's environment). Secondly, I will focus on properly said radio-art of the late twentieth century: I will deal with Murray Schafer's and Bill Fontana's art works to explain how they took up similar rhetorics of tele-presence and reconfigured them in a "poetic of re-presencing" (i.e., "it is now" and "being then").

Keywords: Radio; Radio-Art; Art Radio; Sound-Art; Tele-Presence

Abstract

Questo saggio individua diverse concettualizzazioni della telepresenza nei discorsi sulla radio come medium di massa e medium artistico. In un primo momento farò riferimento ai discorsi storici sulla radio e sull'"art radio" delle origini, per per dimostrare come la trasmissione radiofonica, nei suoi anni formativi, suscitò l'immaginazione del mondo come spazio di risonanza. Le retoriche della presenza a distanza furono alternativamente concepite come "tu sei lì" (l'essere trasportati in un altro luogo) o "esso è qui" (il trasportare luoghi e persone nell'ambiente dell'ascoltatore). In seguito, mi concentrerò sulla "radio-art" propriamente detta della fine del Ventesimo secolo, analizzando le opere di Murray Schafer e Bill Fontana per spiegare come esse riprendano simili retoriche della telepresenza e le riconfigurino in una "poetica del ri-presentificare" (cioè "è ora" e "essere allora").

Parole chiave: Radio; Radio-Art; Art Radio; Sound-Art; Telepresenza

> New media represents an accumulation of the auditive technologies of the past: a realization of the telepresence first offered by the telephone […] an appropriation of the ethereal associations of radio, and an embrace of film sound's spatiality. The features that differentiate new media—the ability to "enter the screen," to interact with three-dimensional images or "virtual objects," to acquire a new subjectivity, a liquid identity, to enjoy authentic rather than mediated experience, and to transcend the material—all these features are present in the phenomenality of sound.
> (Dyson 2009, 3)

This quote from Frances Dyson's pioneering study *Sounding New Media* constitutes an evocative (and someway provocative) point of departure to deal with the archaeologies of tele-presence invoked by the *ARTCHAE* project, and an occasion to take on the invitation to critically re-think today's modes of human virtual presence in media environments by revisiting the experimental work of media art of the past. As a practicing artist and art theorist herself, Dyson maintains that the rhetorical architecture built around the experience of sonic media in the twentieth century pre-dated the emphasis on notions—such as immersivity, embodiment and tele-presence itself—we are now used to liken almost exclusively to a digital domain. All these concepts build upon a well-established characterization of mediated sound and listening as the almost transcending "feeling of being here now, of experiencing oneself as engulfed, enveloped, absorbed, enmeshed, in short, immersed in an environment" (Dyson 2009, 4), consequently calling for notions of transcendence that successfully obscure audio media's technological and cultural origins.

In building upon this suggestive genealogical hypothesis, this contribution focuses on the rhetoric and poetics of tele-presence that had been revolving around radio as a mass medium and an expressive instrument. It does so by putting in comparison different historical conceptualizations of tele-presence, located in the first half and in the second half of the twentieth century in Europe and in America, and different understandings of radio-practice as an art form. The difference between the considered contexts and the significant gap separating the two time periods immediately dismisses any possibly exhaustive account; on the other hand, the same *longue durée* perspective allows to collect close insights on the way in which cultural metaphors of tele-presence associated with radio, as "listening across distances," have changed across time, from the consolidation of audio broadcasting to the dawn of digital wireless. As I will argue, the fascination for challenging spatial and temporal distances through sound transmission and the fantasies of an inter-connected, resonating universe might take different shapes depending on the historical, technological and social contexts that produce them. In this sense, the first argument of this

essay is that, despite being well-rooted in the historical discourse around sonic media, the concept of tele-presence has been invested in different semantic nuances over time. The poetics of avant-garde and contemporary sound artists who have been dealing with the concept of tele-presence in one way or another are better understood when analyzed against the grain of historically acquainted rhetorical architecture. It is only against this backdrop that one can really appreciate arts' critical and self-reflexive take on the power of sound-transmission in superimposing the listener's physical location on the one hand, and the "placelessness" of a virtual listening space that exists only by means of electronic signaling, on the other one.

To support this argument and articulate this diachronic comparison I will maintain the distinction between "art radio" and "radio-art" that was first introduced by Tetsuo Kogawa. In a short essay, the performance artist defined "art radio" as "a radio program that has artistic and experimental content in it," while in properly said "radio art" "airwaves are not a means to carry the content (sounds) but the 'autopoietic' entity of how they appear by themselves" (Kogawa 2014, 50). For the purposes of this essay, the experiment carried out by exponents of avant-garde arts in Europe during the interwar years will provide examples of early art radio—that is to say content made especially to be broadcast and to exploit the expressive potentials of the medium; later artworks and media installation made by contemporary sound artists between the 1970s and the 1990s are instead to be considered specimens of radio-art, as they rely on the principles and the logics of sound transmission more than on the sound themselves. In the first paragraph I will trace back the conceptualization of tele-presence as showcased by some of the major experimental art-radio works of the 1920s–40s to a broader discursive strand of wireless imagination that permeated both technical accounts and the popular press. As I will argue, in this discursive/expressive context tele-presence is an eminently spatial figure, often associated with the modern(ist) notions of ubiquitous and simultaneous listening. In the second paragraph, I will refer to some 1970s-90s radio-art works that, unlike the earlier art-radio examples, involved the actual implementation of transmission channels and information networks to and from exhibition sites. In this context, the supposedly immediate (invisible) character of long-distance audio transmission is resumed and reconfigured to shape a different understanding of tele-presence as displaced, unhistorical listening.

1. Tele-Presence as Ubiquitous, Simultaneous Listening in Art-Radio (1920–40)

Rhetorics and poetics of tele-presence through sound transmission may be considered as an inherent part of a broader discursive formation we may refer to as "wireless imagination." The term is borrowed from the title of a well-known collection of essays on *Sound, Radio, and the Avant-Garde* edited by Gregory Whitehead and Douglas Kahn (1999), which was in turn inspired by Filippo Tommaso Marinetti's 1913 futurist manifesto. In this respect, a specification is in order: unlike Whitehead's and Kahn's, my understanding of wireless imagination does not refer exclusively to the practice and aesthetics of early twentieth century avant-garde. As I already argued elsewhere (Dotto and Ortoleva 2025), if it is true that artists acted as the interpreters of the technological imagination of industrial society, exploring the sensory changes and space-time horizons, it is also true that an imaginative component was already present both in the technically detailed accounts provided by scientists and operators as well as in the layer ones of the popular press.

As proof of this, radio magazines provide particularly fitting examples of the ways in which the "tele-presencing power" of radio was discursively (and visually) framed in the early decades of the twentieth century. Take for instance two ads, both included in an issue of the *Radio Broadcast* magazine in the late 1920s. The first one, by the Music Master Corporation, represents a radio "reproducer" (speaker) as it transmits sport, music, entertainment and other cultural situations (a football match, opera stars in a staging of *Madame Butterfly*…) by materializing them directly in the listener's household. The claims read "in the comfort of your own home—near or far—you hear the sermon, the organ, the singing, the entire church service, as though you were seated among the congregation"; or "you can, in the comfort of your home, follow your favorite team up and down the field" ("With the Tongues of Men" 1925a, 993). The second ad promotes the radio receiver manufactured and sold by the Mu-Ra Laboratories, presenting the image of two men with turban as they fly on a carpet into "Arab Nights." The analogy gets explicated by the claim: "the 'magic carpet' expressed the medieval idea of ultimate in swift transportation. TO-DAY, the radio scientists' conception of radio reception is the new Mu-Rad Receiver MA-20" ("Modern Arabian Nights Entertainment" 1925b, 656-k). These ads are nothing but two examples of the most re-occurring concepts of tele-presence that Matthew Lombard and Theresa Ditton identified respectively with the expressions "it is here […] that sense of presence that can bring the objects and people from another place into the media user's environment" and "You are there [...] in which the user is transported to another place" (1997). Although in these cases both the variants are aimed at emphasizing the life-like, apparently unmediated quality of transmitted sound coming out of the receiver, it is worth

noticing that neither of them constitutes an exclusive prerogative of the radio apparatus. Variants of the rhetorical motif of "living presence" had been applied to almost any kind of media experience, from listening to recorded sound (Thompson 1995) to watching tv, as a sort of media topos (Huhtamo 2011). Metaphors such as "home theatre" or a "window on the world" would eventually become quite common figures of speech to indicate the effectiveness of several media devices. Nevertheless, it is quite intuitive that audio broadcasting was particularly suited to evoke fantasies of space-traveling. Even a scientist of the like of Guglielmo Marconi, internationally renowned as the founding father of radio, indulged in similar fantasies of world-traveling through the airwaves. Significantly hailed as "a space explorer who […] immerses himself in the ocean of sound waves with the power of thought" ("Marconi" 1930, 1, my translation), in 1930 he accepted his nomination as President of the Italian Academy and gave a speech on the future developments of telecommunication technologies:

> Radio, that has obliterated distances and united continents, is about to connect every man to each other, assuring every dialogue the most jealous of secrets. Wonder! [It is] the infinite multiplication of what already seems a miracle, that waves dispose in the sky chasing, intersecting, overlapping and overtaking each other, bringing unchanged sounds and words from one horizon to another. […] Even the most distant house, after breaking all isolation, will be able to live in contact with the cities, to hear all the beautiful and interesting things that are happening in the world. (Quoted in "Marconi" 1930, 1, my translation)

Compared to the layer conceptions of wireless imagination, which often presented the process of sound transmission as a sort of "miracle" or "magic", Marconi's speech cannot obscure the techno-scientific dimension of broadcasting. By talking about how "the waves dispose in the sky […] bringing unchanged sounds and words from one horizon to another" he addresses the infrastructuralization of the ether that constitutes the very technical condition of wireless communication. Still, even the Italian inventor cannot help speculating on the foreseeable social consequences of the latest technological achievements and dares to predict the transformation of the sky into a communicational environment and that of the world itself in an increasingly resonating, interconnected, simultaneous space, where everything can be heard everywhere as soon as it happens. Being "carried far away" without moving or having any event in the world delivered at home are not only experiences accessible to the consumer who could afford buying a high-quality receiver or loudspeaker: they are instead, according to Marconi's view, a distinctive trait of technological modernity.

This widespread understanding of tele-presence as an eminently spatial figure and of radio's promise to annihilate physical distances consistently resonates in several of the major experimental radio-plays (or art radio) of the early

twentieth century. Years after having introduced the original concept of "wireless imagination" (*immaginazione senza fili*) to indicate the Futurist poet's capacity to discover and establish new analogies between apparently distant things and images, Marinetti later participated to the debate on the existing radiophonic theatre by advocating for a "a synthetic, quick, simultaneous, surprising theatre […] as the futurist one, which requires everywhere the speed of a revolving stage" (Marinetti 1931, 416, my translation). The challenge posed by the futurist sensibility toward more traditional theatre's unity of time, place and action is exemplified by some of Marinetti's works written especially to be transmitted by the Italian State broadcaster EIAR (see Fisher 2009). Transmitted for the first time in 1933, the "radiosynthesis" *Violetta e gli areoplani* ("Violet and the airplanes") is an unusual radio-play in three acts, telling the story of a young girl and a group of kids who hook the lighthouse tower to a three-jet aircraft headed from Costantinople to Naples. In explicitly likening the medium of radio to air transport, Marinetti's work also inaugurates what the poet concurrently defined "aeropoetry", "giving a minute-to-minute synthesis of the world and, like the radio in the fuselage, the center of a world-wide acoustic network" (Marinetti 1933, 3, my translation). In approximately the same period, pioneers of the emerging German *Rundkunst* of the Weimar era experimented different aesthetic formulas around the reoccurring motif of world-traveling (see Jelavich 2009, chap. 3). As they were managing the radio-drama departments respectively at the Breslau and the Berlin radio station, between 1927 and 1930 Fritz Walter Bischoff and Alfred Braun directed two widely influential radio-plays, *Hallo! Hier Welle Erdball! Eine Hörsymphonie* ("Hello! Here is Radio Earth Calling! A Sound Symphony") and *Weltreise durch einen Arbeitstag* ("A World-Journey in a Working Day"). While the former introduced the use of sound recording and audio-editing technologies to simulate newscasts coming from a transatlantic steamer or an office in New York, from someplace in Africa or Japan (H.U. 1930), Braun's radio-play juxtaposed acoustic impressions of "stokers on an ocean-going ship, fishermen in the North Sea, miners in the Donets Basin, Egyptian and Indian farmers, iron workers at Borsig and in Transcaucasia", resulting in "a colorful parable for the simultaneity of world labor" (quoted in Schwitzke 1963, 63, my translation). These artworks, created within the Futurist and the New Objectivity movements, are but two possible examples of the avant-garde's broader fascination for what Carolyn Birdsall defines as the "global ether" (2014, 261). As aesthetically diverse as they might be, both works constitute a meta-representation of radio through radio, or, better said, a medium-specific *mise en abyme* of the medium. Art-radio sets up the virtual listening spaces of on-air transmission to stage the act of listening across global ether into the (actual) listener's physical space—or, as Katey Lacey puts it, "for the listener's experience of time and place to be intercut into the acoustic reconstruction of a global geography of shared acoustic experience"

(2012, 97). In the modern rhetoric of science and popular culture and in the modernist poetics of avant-garde art, tele-presence implies the personification of the virtually ubiquitous character of radio broadcasting in the "here and now" of listening.

2. Tele-Presence as Displaced, Unhistorical Listening in Radio-art (1970–90)

Let us now jump forward a few decades and move the attention to a different global geography of sound. Canadian composer and musicologist R. Murray Schafer is often presented in continuity with the European art experiments of the first half of the twentieth century, both for having acknowledged the cultural autonomy of (non-musical) sound and for the global scale of his well-known *World Soundscape Project*—which would eventually prove quite influential for sound art in general. However, differently from Marinetti, Braun and other art radio exponents, Schafer conceives the world as a resonating place not *because of* but *despite the* ongoing technological progress in tele-communication. As a sonic environmentalist, he defined radio and other technologies of sound reproduction/transmission as "schizo-phonic" for they split sounds from their original source, therefore contributing to contaminating and corrupting the natural soundscape. In his words, "the benefits of the electroacoustic transmission and reproduction of sound are well enough celebrated, but they should not obscure the fact that precisely at the time hi-fi was being engineered, the world soundscape was slipping into an all-time lo-fi condition" (Schafer [1977] 1994, 88). The ecological sensibility in which the very notion of soundscape is grounded is at odds with the modernist fascination for technology as a tool to dominate and transform the environment. Nevertheless, this techno-skeptical approach didn't prevent Schafer from contributing to reviving the debate on the artistic potential of radio. In a short essay entitled "Radical Radio" he maintains that, should radio become an art form, "its content would be totally transformed. No longer would it spin as the slave to machine technology, mechanical and clocked. No longer would it palpitate with the spasms of production and consumption. It would outstrip the impediments of mechanization, it would drown the fury of the hawkers and hucksters, and it would muzzle the voices of newscasters" (Schafer 1990, 216). What the author means by radical radio is a "phenomenological," almost metaphysical concept of sound transmission, as opposed to the "humanistic," mundane notion consisting in the programming and broadcasting of words and music. As an example of this oppositive, anti-modern form of radio-art, Schaffer mentions an idea he has been working on for a while with his fellow composer and soundscapist Bruce Davis called "Wilderness Radio." The project consisted in establishing sound transmission

between urban and natural spaces by "putting microphones in remote locations uninhabited by humans and to broadcast whatever might be happening out there: the sounds of wind and rain, the cries of birds and animals – the uneventful events of the natural soundscape transmitted without editing into the hearts of cities" (Schafer 1990, 217). The *Wilderness Radio* project aims at radicalizing the very notion of sound transmission by refusing to rely on the already existing broadcast network and establishing instead connections from one point in space to another one. The artistic and social goal here is to criticize the industry of broadcasting by putting radio where it is not supposed to be and by transmitting something that the traditional listener/consumer wouldn't expect, superimposing the virtual, transmitted space (wild nature) over the listener's physical space (urban centers).

Even if it remained ultimately unrealized, the *Wilderness Radio* project has some traits in common with "radio-art" as defined by Kogawa or, at least, it identifies the artistic potential of the medium with something close to what other scholars described as "transmission art" (see Joseph-Hunter 2009; 2011). By critically reassessing the concept and technically reconfiguring the practice of audio-transmission, it moves away from the one-to-many communicational model of broadcasting in favor of a many-to-one/many-to-many interconnections. According to Anna Friz, transmission art acts to "de-industrialize communication and reconsider transmission as craft. Artists engage circuits and circumstances of transmission that are made, not manufactured, with an interest toward collaboration with the materialities of wirelessness" (Friz 2009, 47). Similar endeavors had been undertaken by the prominent sound artist Bill Fontana between the 1970s and the 1990s, with a series of site-specific installations called "Sound Sculptures" he had been creating across the United States, Europe and Japan. The concept of (analogue) "musical information network" was at the core of this series: Fontana started out by establishing temporary circuits of audio-transmission among different places, using an outside broadcast van, sending signal through telephone lines and wireless communication. Each sound sculpture consists of a network of simultaneous listening points that relay real-time acoustic data to a common listening zone—the sculpture site. One of these installations came quite close to putting into practice Schafer's concept of "Wilderness Radio." In fact *Sound Sculptures through the Golden Gate* (1987) transmitted the sounds of the Farallon Islands National Wildlife Refuge—which hosts more than five hundred thousand birds and three thousand mammals—to the San Francisco Golden Gate Bridge, thus bringing wildlife sounds to the ears of the passer-by, who was suddenly turned into a (casual) listener (see Fontana, n.d.; Busechian 2020). What this artistic reinterpretation of sound transmission beyond mass broadcasting shares with Schafer's is the interest in connecting the natural and urban environment to critically reassess the often-unnoticed relevance of the aural dimension of our daily life. Unlike

the exponents of art-radio of the early twentieth century, Schafer and Fontana have no interest in addressing or magnifying the technically equipped, distinctively modern listener "in the comfort of his house" as their primary recipient. Their effort was instead aimed at stimulating Western modern men and women who live in the city to re-discover their sense of hearing and to cultivate their listening skills by providing them with an unexpected aural experience during their everyday life. Even if these aims have little to do with the modern(ist) ambition to master the environment as a communicational space by crossing the global ether, they can still be seen as claims for an alternative design of the global soundscape. What remains unchanged is precisely the artists' firm belief in the tele-presencing power of radio—Bill Fontana's insistence to hide the loudspeakers of his sound sculpture from the Golden Gate passerby's view to form "a transparent overlay to visual space" (Fontana, n.d.) hints at his confidence in the inherently immersive qualities of technologically reproduced sound. What changes is the expressive goal: in this case the virtual space of broadcasting and the physical space of the recipient do not conflate but create friction. In other words, radio can still transport the user to another place or bring objects and events to the user's environment but only to instill in the user a sense of displacement. Both in *Wilderness Radio* and in the Golden Gate's sound-sculpture the sound of wildlife *is there* where it is clearly not supposed to be; listeners/visitors *are there*, sensorially transported and virtually immersed in another, untamed environment at odds with the one they're physically moving in.

It should be noted that the critical instances of radio-art at the turn of the century are by no means limited to reconfiguring the meaning of tele-presence as a spatial figure but may also extend into the temporal dimension. In the already mentioned essay, Murray Schafer maintains that, like any other art form, radio-art should represent "an enemy of the present. It always wants to change it by introducing other tenses. It alters the perceived world by introducing new rhythms, forgotten, ignored, invisible, impossible" (1990, 216). Once again, the suggestion seems to find a practical application in Fontana's artworks, especially in those sound sculptures that were located in historically significant places. The most significant example in this sense is the installation *Distant Trains*, realized in 1984 by Fontana in Berlin and located in the area that used to be the railway junction and commercial exchange center with the west before being bombed and destroyed during the Second World War. The amplifiers, buried in the abandoned space of the building and arranged in parallel to evoke the conformation of the railroads, are connected to hidden microphones in the still-active railway station of Cologne to reconstruct a crowded acoustic space in a now deserted place ("Distant Train Presentation," n.d.). The expressive aim is not different from the one of the *Golden Gate Bridge Sound Sculpture*, to surprise the visitor by displacing him/her. Here, however, the temporary acoustic network connecting different points in space is not aimed at displacing the casual listener

into another place; instead, it intends to immerse him/her in a different time, when the Berlin station still stood up and the trains were still running. In this case the principle of sound transmission underlying the musical information network is set to elicit fantasies of time-traveling. As it was stated by contemporary art scholar Mandy Suzanne Wong, albeit in reference to another context, "Sound art can do some historical work that language can't. A sound artwork isn't a description of the past but a presencing of the past in the here-and-now" (2017, 363). In our case, the poetics of tele-presence exemplified by Fontana's radio-art make use of a sound transmission network to re-presence (that is acoustically superimpose) a different, apparently unrelated time and place in the time and place of listening. Paraphrasing Lombardo and Ditton's classification, one could state that, when understood as listening across time, as a temporal dislocation, tele-presence offers the listener the chance of "*being then*"—transported in a different time—or creates the "*it was now*" effect—hearing acoustic remnants re-emerging from the past as ghostly presences.

To summarize: as a rhetorical trope traditionally associated with sound media and tele-communication technologies, radio's tele-presence constitutes some sort of "varying same." Whereas a certain tendency to talk about sound transmission as traveling across worldwide distance had been constantly resurfacing in discourses about radio as a technology, a mass and artistic medium, this tendency has been significantly changing form and meaning over the decades. In the wake of the general enthusiasm toward the possibilities opened by the global ether, art-radio exponents and avant-garde artists tried to encapsulate the effect of simultaneous, ubiquitous listening with in-studio, partially pre-recorded works thought specifically for being broadcast. For their part, soundscapers and sound artists of the second half of the twentieth century engaged in the implementation of alternative transmission channels and networks to detach everyday listeners from their aural routine, using the tele-presencing power of radio to displace us in different spaces and times.

In conclusion, notwithstanding Dyson's thesis about the genealogical continuity between analog sound media and new (digital) media, it is important to remember that not all the aural presences have always looked (or sounded) the same. To paraphrase Schafer's famous title, there have been (and there still are) more than one way to "tune the world" by means of audio transmission.

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Broadcasting and Taping Loops, Feedback, Delays, and Noises: Tele-Presence as a Time Machine*

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Abstract

This chapter explores the key role of sound technologies in art experiments with telepresence between the 1960s and the 1990s, with a focus on early electronic arts. With a media archaeological approach, it will show that practices and machines activated in video and telematic arts have a common origin and intrinsic relation with sound media, a technological and artistic realm often investigated by female artists. The contribution will first conduct a historical investigation on electronic spaces, machines, and actions between 1963 and 1974; then, it will conduct a media-ar(t)chaeological excavation in which experiments with electronic devices will reveal telepresence operations and strategies related to temporality, to face the times in which "new media" flatten distances and chase simultaneity.

Keywords: Video Art; Telematic Art; Tape; Broadcast; Media Archaeology

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Abstract

Il capitolo esplora il ruolo centrale che hanno avuto le tecnologie sonore negli esperimenti artistici con la telepresenza tra gli anni '60 e '90, con un focus sulle prime arti elettroniche. Con un approccio mediarcheologico, mostrerà come le pratiche e le macchine usate nelle arti video e telematiche abbiano un'origine comune e relazioni intrinseche con i media sonori, un ambito esplorato dalle artiste. Il saggio condurrà prima un'indagine storica sugli spazi elettronici, le macchine e le azioni attivate tra 1963–74; poi condurrà uno scavo mediar(t)cheologico in cui gli esperimenti con i dispositivi elettronici riveleranno operazioni e strategie di telepresenza legate alla temporalità, per fronteggiare tempi in cui i "nuovi media" hanno annullato le distanze e inseguito la simultaneità.

Parole chiave: Videoarte; Arte telematica; Tape; Broadcast; Archeologia dei media

1. Introduction: on Electronics, Telepresence, and Art-based Archaeology

In 1963 the guests of Nam June Paik's exhibition "Exposition of Music. Electronic Television" in Wuppertal had been captivated by 12 prepared televisions (Medien Kunst Netz, n.d.), a practice used for altering instruments in music that can be considered a sort of "hacking" of the original set-up and functioning. One of the devices required the participants to talk into a microphone directly connected to the TV set, while watching the resulting electronic image modulated by the quality of their voices on the screen. This artwork was titled *Participation TV*. In 1967, during a live broadcast of sound art performed by Maryanne Amacher, the auditors in Buffalo were able to switch on the local radio channel and listen to a mix of eight sonic viewpoints of the urban environment in which they were immersed. During the 28-hour flow, a speaker seldom interfered in the sonic flux revealing the operation behind that unusual experience.[1] In 1968 Allan Kaprow connected several locations in the Boston area via CCTV, managing a rudimentary "two-way transmission" from the control room of a local TV station and then broadcasting its recording. He and other participants surprisingly communicated with each other mainly using their voices, often looking for the eyes of the other on a monitor rather than on the camera that was capturing them, as the apparatus was designed not to allow such encounter: "I see you," "I don't see anybody," "Hello, I see you," "Hi guys, where are you?," "I see you! I see you! Hi!"—a circuit of missing gazes that still happens today with teleconference platforms (Dalmasso and Grespi, *infra*).

1 WBFO Buffalo circa 1967. 5 audio recordings: 516573, 516574, 516575, 516576, M 22-25. Maryanne Amacher papers, Katharine Cornell-Guthrie McClintic Special Collections of the New York Public Library for the Performing Arts, Dorothy and Lewis B. Cullman Center.

From these prominent examples, a set of issues emerges: artists used broadcasting technologies to communicate in real time on a mass level, to alter them, and to show the communicative dead-ends that were inscribed in the non-interactive technology of "one-way transmission"; artists aimed to involve spectators and turn them into participants, looking for fruitful relations between subjects to be mediated in real time at a distance—the key property of tele media—by using electronics; these expressions for co-presence and encouragement of responses into a productive feedback by technical means were mainly developed in the realm of sound strategies and tools, and in what was soon after labelled as "video art" (Schneider and Korot 1976; London 2022). Today, in a warfare of frequencies and vibrations (Goodman 2012), we can excavate to those early times of experimentations in "electronic arts" (Soldani 2025) to analyze plans and failures of artists that used and subverted industrial technologies while creating further machines and networks.

The essay explores how the materiality of electronic sound contributes to constructing the sense of telepresence, that is "the feeling of being present at a remote location by means of real-time telecommunications devices" (Paulsen 2017a), in art works mostly accounted in visual terms. It will prove how, in video and telematic arts, "the creation of presence is actually most successful in the signal-acoustic channel" (Ernst 2016a, 114), and how female artists have been crucial in attaining this. Accordingly, the essay deals with the sonic aspects that informed video practices, which were activated with closed-circuit systems of transmission and taping. Techniques like feedback, playback, and delay will reveal hidden connections with the concepts of acoustic, electronic, and cyber spaces, especially considering how the notion of "image as a place" was outlined in the experiments with telepresence (Galloway and Rabinowitz in Paulsen 2017a, 110). Thus, processes of mixing and taping will reveal how the involved machines were able not only to manage space and visuality, but mostly to manipulate time and create multiple temporalities, as in the works of Amacher and Steina Vasulka.

The emergence and spread of tele media, with the contextual produced art projects, is interpreted here as a moment of rupture in the history of media, in accordance with the media-archaeological approach (Ernst 2013). In this respect, two key periods will be considered: from the mid-1960s to the mid-1970s—when intense experiments occurred with radio and television broadcasting (Churner et al. 2024), like those at WGBH-TV (Barzyk 2001), as well as with electronic tools mostly developed from audio technologies, such as the synthesizers designed by Don Buchla and Robert Moog (High et al. 2014); and from the late 1970s to the early 1990s—when media events labelled as "telematic art" (Ascott 2003) settled highly hybridized systems and networks that involved telecommunications, tested satellite technologies, and experimented with virtual reality and the net still using such electronic devices as the telephone.

Our media-archaeological methodology, between history and theory, will investigate the materiality of electronic media (Ernst 2013, 2016b), the concepts of "delayed time" and "tempor(e)alities" (Virilio 1992, [1988] 1994, [1995] 1997; Ernst 2016a, 2016b), plus the idea of "temporal delay [as] the technological alternative to emphatic permanent storage" (Ernst 2016a, 9) that challenges the archival processes established by power structures (Foucault [1969] 1972, [1976] 1978; Kittler [1986] 1999; Bohlman and McMurray 2017). Today, the everyday experience of telepresence is to be continuously online and detected through wireless smart media, which arises as a chronophagic, controlling, centralized system (Galibert 2013; Crary 2014; Estremo et al 2024). Differently, the archaeology of telepresence that will be sketched here will explore bottom-up, alternative forms of communication and networks that expressed the potential of electronic arts with tele media. These practices dealt not only with space but mostly with time, by generating and manipulating the im-materiality of waves and frequencies into audiovisual contents, structuring circuits, and activating precise media operations.

The essay is divided in two parts: the first part presents a historical investigation on places of production, machines, and early experiments with broadcasting and taping in electronic arts (sound, TV, and video arts) between 1963–74, when artists triggered actions that aimed at viewers' participation in public or private environments that were heavily mediated by technology; the second part proposes a media ar(t)chaeological excavation from early digital art, especially telematic art, back to those electronic experiments, casting the idea of cyber/electronic/acoustic spaces into transmission and tape operations, to understand a series of perceptive strategies for productive uses of such technologies in the frame of telepresence.

2. Historical Investigations (1963–74): Electronic Spaces, Machines, and Actions

2.1 The Lab Mindset Meets Tinkering Approach, Cultural Scenes, and Intermedia Events

The twentieth century was marked by an intense activity in designing devices and licensing patents related to electronics and telecommunications. This industrial excitement, represented in the issues of the *Bell Labs Monthly Bulletin* from 1925 onwards,[2] is well expressed at Expo 1970 Osaka, where the design of Pepsi Pavilion and its multimedia performance were entrusted to the group Experiments in Art and Technology led by Bell Labs' engineer Billy Klüver and artists Robert Rauschenberg and Robert Whitman. Bell Labs encouraged

2 Cf. *Bell Laboratories Record* (1922-83) and *Record - AT&T Bell Laboratories* (from 1984).

such collaborations in the form of art residencies, which involved Paik, Lillian Schwartz, Stan VanDerBeek, and Laurie Spiegel. Thus, working spaces were formed to experiment with electronics, revealing the lab mindset of those years (Wershler et al. 2022). We can find projects supported by the public sphere, such as national broadcasts and state universities, and by the private sphere, such as corporate research centers, facilities and studios independently formed by artists and engineers. (Dunn 1992)

Local radio stations and TV channels promoted electronic experiments. At WBFO FM in Buffalo Amacher performed *City-Links #1* (1967), a 28-hour broadcast, and at KPFA FM in Berkeley Suzanne Ciani created the tracks for the exhibition *Voices of Packaged Souls* (1970). KQED in 1969 formalized the experimental TV workshop National Center for Experiments in Television (NCET), the context where Terry Riley broadcasted his video-performance *Music with Balls* (1969), and Stephen Beck prototyped the Beck Direct Video Synthesizer (1970) testing it in video-performances like *Synthesis* (1971). WGBH collaborated with sound artists: in 1972 Ron Hays employed the Paik-Abe synthesizer and started the Music-Image Workshop, hosting in 1973 *Sea Legs* by Amacher (Hays 1974). From 1972 to 1984 WNET developed the TV Lab division and employed the Paik-Abe and Rutt-Etra devices, funding Shirley Clarke and Joan Jonas, as well as producing works as Paik's *Global Groove* (1974). Universities covered a special role, particularly in the New York state: since 1969 SUNY Binghamton housed the Experimental Television Center, founded by Ralph Hocking, where Paik and Abe implemented their machines; at Syracuse University Bill Viola joined the Synapse studio and collaborated with David Ross at Everson Museum; at SUNY Buffalo Steina, Woody Vasulka and Peter Weibel taught and established their studios. The spirit of the artists' network is well depicted in *Everson Museum: Video and the Museum Conference* (1974), the video documentation of the event collected by Videofreex, in which is collectively shown and experienced the functioning of several video systems and settings.

Independent facilities, basically studios that arose out of artists' initiative, became hubs for expanding tools and operations. In the mid–1950s the studio of the Barrons in New York City rented electronic technologies, largely customized by Louis for Bebe's compositions, to artists like John Cage. In 1962 composers Ramon Sender and Morton Subotnick founded the San Francisco Tape Music Center, a studio soon enlivened by the activities of Pauline Oliveros and performances as the premiere of Riley's *In C* in 1964. In 1966 Subotnik moved to New York City and founded a studio at NYU where artists – as the Vasulkas, who directed the no-profit space The Kitchen from 1971 to 1973 – learnt how to use electronic machines (Bernard Gendron, email to author, June 17, 2025). Still in 1971 Howard Wise converted his gallery in the video facility and distribution Electronic Arts Intermix, which supported Charlotte's Moorman's Annual Avant Garde Festival, The Kitchen, and Eric Siegel's machines. These

three places flourished in a few blocks of downtown Manhattan, where venues, studios, rehearsal, and exhibition spaces had been interlacing interdisciplinary collaborations (Gendron 2002; Hoberman 2025). This mapping brings us to the concept of cultural scene (Straw 1991, 2004; Shank 1994), employed in popular music and cultural studies to frame intermedia art experiences, particularly from the 1960s, that establish a key relation between music practices and visual media (Soldani 2017). According to Will Straw, a scene is a situated context within a city where an assemblage of activities is shared in spaces and evolves through connections and interactions, due to processes of "differentiation" and "crossfertilization" (Straw 1991). These sites for experimentations and nexus of strategies are documented by programs of venues that include "intermedia events" such as INTERMEDIA '68 (Fig. 1), a festival staged at Brooklyn Academy of Music with artists that, according to the producer John Brockman, "have abandoned the notion of art as metaphor to deal with man in time and space."[3]

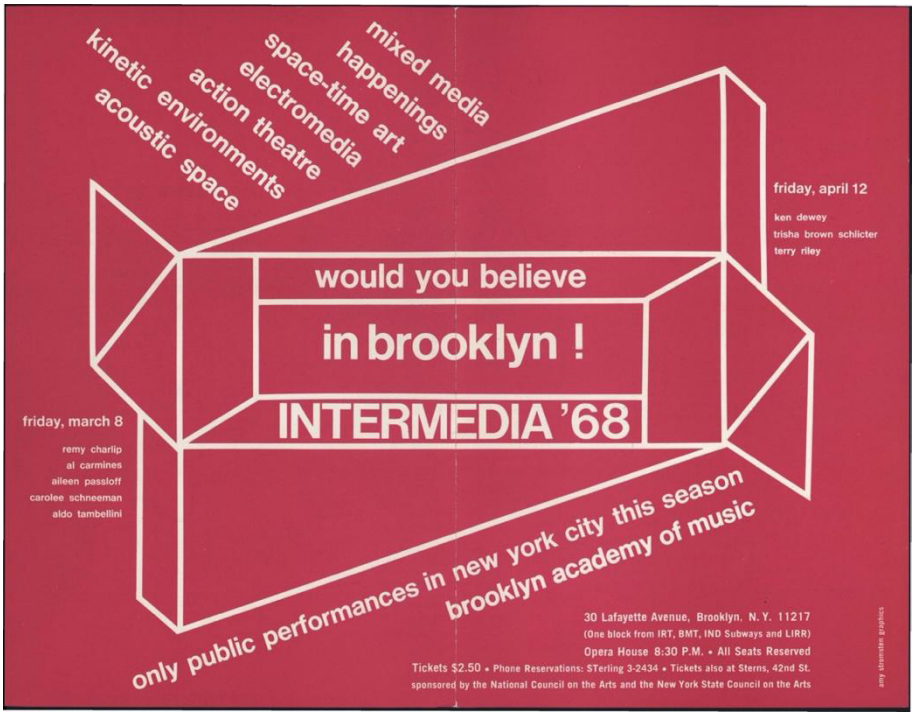

Figure 1. Handbill from "INTERMEDIA '68" During BAM Spring Series, 1968. Courtesy of BAM Hamm Archives

3 Cf. Doc. "10646_ca_object_representations_media_73322_original," BAM Hamm Archives.

2.2 Crafting Electronic Machines

The introduction of electronic technologies represented a turning point for the conception of media art works, starting by the fact that they were designed for "temporary storage rather than for archiving" (Ernst 2016a, 99). For sure, these devices requested different approaches and outcomes, given their structural differences, from that of traditional music instruments or film devices, such as super8 and 16mm film cameras. According to Viola: "All video has its roots in the live. This vibrational acoustic character of video as a virtual image is the essence of its 'liveness'. […] The video camera […] bears a closer original relation to the microphone than it does to the film camera" (1990).

Actually, two key methods that characterize the use of those tools from music to video productions are the modular thinking, which consists in creating a chain of interchangeable tools that process the signal and contribute to a specific A/V result, and the practice of mixing rather than editing (Dubois 1995), which is strictly connected to music practices that cross avant-garde music, electronic jazz, as well as, later, EDM and jazz. The analyses of a series of signal transmission and recording devices will highlight these aspects and put them in relation to telepresence.

For MIT A.I. Lab director Marvin Minsky, telepresence is chiefly connected to the idea of creating media that are able to "feel and work so much like our own hands" by using "remote control tools" and "sensory feedback" (Minsky 1980). Instead, for artist and theorist Roy Ascott telepresence is enliven by a holistic nature, a form of expanding perception and consciousness beyond bodies and individualities as the condition of being "both here and there… whether mediated by" electronics and telecommunications (Ascott 1991, 116). The following machines, derived from audio system and expanded into video tool, can be framed within these characteristics of telepresence.

Tape systems are based on the laws of electromagnetism, in which the magnetic force itself is seen as an "*action at a distance*," as much as "electronic charge and gravity" (Camras 1988, 15). The magnetic circuit, which is a "closed magnetic path" (Camras 1988, 17), is the basis of magnetic tape formats (e.g., reels, cassettes) and decks (e.g., recorder, player) that enable the taping actions (e.g., record, playback, rewind, fast-forward). Tape machines have multiple magnetic heads, unique or combined, for recording, playing back, and erasing signals while spooling the tape. By putting tapes in a chain of decks that manage the distance between recording and playback, it is possible to generate effects based on repetitions like echo and delay. From the 1950s tape machines became a trademark for composers and artists that worked on temporality, since these "electronic storage media" created "a form of decelerated, temporally extended present" (Ernst 2016a, 104). Performer-composers implemented electronic systems in collaboration with engineers, two of them resulting particularly relevant to our scope: Oliveros' Expanded Instrument System (EIS) and Riley's

Time Lag Accumulator. Their role in the Bay Area cultural scene, including the collaboration with KQED, is historically acknowledged, also in Robert Ashley's video portraits *Music with Roots in the Aether* (1976) premiered at The Kitchen.

At the end of the 1950s Oliveros started to work with tape delay techniques (Oliveros [1969] 1984) with the idea of creating a performance system for manipulating the sound of instruments while interacting with what was already performed and transformed, and what would be performed in response to those past sonic events re-presented in playback. Since 1983, she had developed the EIS, a complex and flexible "performance environment constituting of a network of time delays, mixing routes, microphones and a multichannel speaker configuration" (Oliveros and Panaiotis 1991), which progressively involved electronics and programming such as in the album *The Roots of the Moment* (1988) or in performance with dancer Paula Josa–Jones for *Ghostdance* (1998). So, for her delay is a crucial condition for exploring a form of embodied knowledge through the processes of listening and playing, such as the memories of hands and feet that a musician matured in years.

At the beginning of the 1960s Riley also composed for dance performance and, to deal with the movements of bodies and the idea of layering temporalities, he started to use tapes, as in *Mescalin Mix* (1960), a piece created for Anna Halprins Dance Company that reworked various real-world sounds in closed tape loops. In 1963 in Paris, while rehearsing for Ken Dewey's play *Music for The Gift*, he and an anonymous sound engineer created a tape delay module with a feedback system based on two open-reel tape recorders, one to record and one to playback (Carl 2009, 22–40). The Time Lag Accumulator was a machine basically able to loop, manipulate, and propose again sounds at different times and pitch, so it was at the same time an opened-circuit, a feedback system—and a time machine. In fact, this device was able to assemble and overlay recordings made at different times, and, through the playback function, to re-present and mix these at different durations, while other live sounds were produced during the performance. These machines could open the circuit among transmission and recording technologies, which were originally designed as closed-circuit between microphones and amplification system, by using multiple open-reel tape decks in recording and playback modes, plus other echo or delay effects that were included in the modular chain. For instance, in the broadcasted work *Music with Balls*, the optical manipulation expands the tempor(e)alities when Riley mixes live his played instruments, looping and feedbacking its recordings with two open-reel tapes, while the director created a unique flux of mixed images that doubled the sonic processuality. Thus, these systems contemporaneously stressed the feeling of being present with the feeling of relating with that same presence later in the performance, since tapes were looping past events and performers responded live to those taped "ghosts."

Avant-garde music, especially from Cage, introduced mixer, radios, and other electronic devices in performance and studio works (Piekut 2011). Don Buchla was a key figure for this sonic machines: he produced the Buchla 100 (1963), a commission by Subotnick and Ramon Sender that was also used by Oliveros, Riley and Ciani, and Buchla 200 (1970), influencing the production of several video synthesizer, such as Bill Hearn's Vidium (1969—see Dunn 1992, 104–107) and Beck's Direct Video Synthesizer (1970—see Dunn 1992, 122–125), which included a TV set and a Buchla machine (Dreher 2020, 141). Thus, there is a parallelism between Buchla and video devices, and it was explored in the improvised music-video performances at the Exploratorium between Ciani and Hearn (1969—see Soldani 2025) and at NCET between Beck and Warner Jepson, known as *Illuminated Music II* and *Illuminated Music III* (1972–73), in which, as the speaker reveals, "the image is controlled precisely by the artist, by manipulating knobs, switches, and dials as he performs his composition. In the same way the Buchla audio synthesizer allows composer […] to generate forms, textures, and colors in sounds." According to Beck, a synthesizer can be conceived "as a generative device" that processes signals, or "as a filtration device" that manipulates a given sound or image producing infinite outcomes (Dunn 1992, 162).

Eric Siegel created the Processing Chrominance Synthesizer (PCS, 1968–69) and the video installation *Psychedelevision in Color* (1968), presented in the exhibition *TV as a Creative Medium* (1969) at Howard Wise Gallery, later providing it with a tape deck to record it as *Einstine* (1968). Siegel manipulated the iconic image of Albert Einstein mixing it with color feedback through the effect of chroma-key. In 1970 he produced the Electronic Video Synthesizer (EVS, Fig. 2) with the idea of reconnecting personal perceptions in a wider collective circuit, a machine that could enable of being together in a loop of stimuli beyond rationality, since "each human being is enshelled in his own perception of reality. […] We all perceive different worlds, in the same world."[4] Meanwhile, the Paik/Abe synth was developed in varied prototypes at WGBH (1970), Experimental Television Center (1972) and WNET (1972). These machines were able to "generate and mix signals" (Vidium, PCS, EVS) or "to mix signals received by cameras" (Paik/Abe synth) (Dreher 2020, 139-140) into a modular system, becoming operations that defined electronic technologies and practices.

4 Doc. "Whitney Museum of American Art. New American Filmmakers Series presents A Special Videotape Show: VIDEO PROGRAM II". Electronic Arts Intermix. Box 5, Folder Eric Siegel Literature.

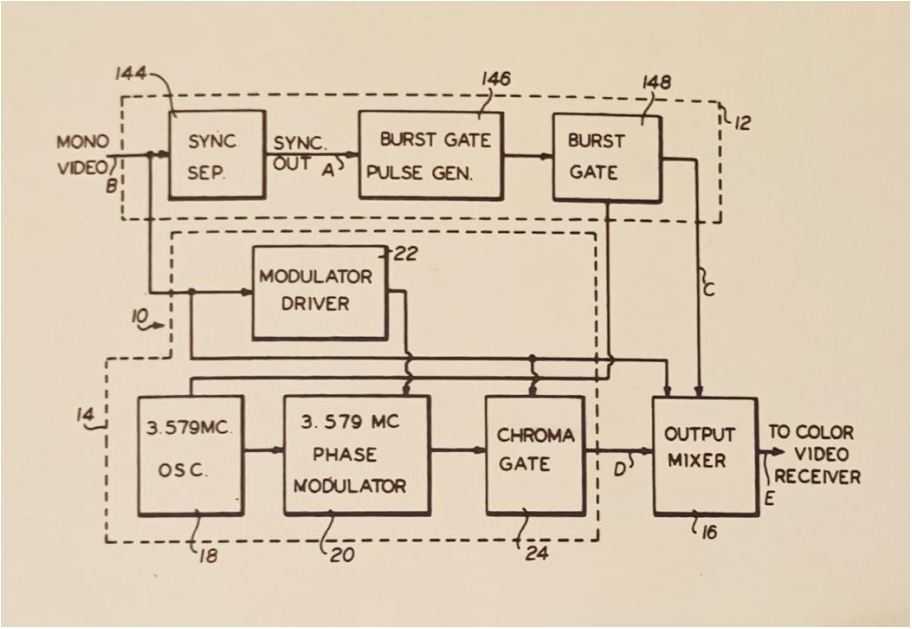

Figure 2. Siegel Electronic Synthesizer. U.S. Patent #3,647,942. March 7, 1972. Box 5, Electronic Arts Intermix. Courtesy of Electronic Arts Intermix. Public Domain.

2.3 Creating Multiple Tempor(e)alities with Electronic Practices

In the mid-60s, together with "offline" experimentations with TV-sets and video technologies, a series of musical projects reworked the perceptual involvement of the spectators by using electronic media and broadcasting. For artists, to be involved with TV and the network system, or to be involved with video and the gallery system, meant to test and act in different ways and operate with different formats that could not easily be moved from one technological system to another (Paulsen 2017b). In this section we will review some key experimentations on broadcasting made by artists in Europe and US between 1963 and 1972 that involve the use of tape recording. According to Ernst, these technologies produce "the intensification of the temporal moment" (2016a, 12) and enlighten "a new temporal reality (*Zeitreal*) based on the microtemporal logic of electronic circuits" (2016a, 114), which questions the notion, established in Western cultures, of a chronological time subdivided in past, present, and future. Furthermore, these projects were accomplished by using radio and TV apparatus that included broadcasting on public-access channels and working with well-equipped studios and skilled producers and technicians, such as Fred Barzyk.

Cage's *Variations V* (1965–66), composed for the Merce Cunningham Company, and Amacher *City–Links* (1967–88) were situated tele–events.

Premiered in 1965, *Variation V* was produced by Nordeutscher Rundfunk (NDR) and Sveriges Radio Television as a multimedia performance in Studio Hamburg in 1966. Within an electronic environment designed by Klüver and Mathews with Moog, it was performed live by Cage with David Tudor and Gordon Mumma on electronics, including short-wave radios and tapes with pre-recorded materials, by VanDerBeek on film and slide projectors, and by Paik on TV signal (Experiments in Art and Technology, n.d.). The studio was settled as follows: a desk of electronic equipment in front, including radios and oscillators, that received live signals by devices located in the stage, while a set of multiple screens showed multiple streams of images from real world in the fashion of "expanded cinema" (VanDerBeek 1966). Dancers generated sonic interventions by moving in the space through two different systems, which were ten photocells that activated tape recorders and shortwave radios and a series of antennas that created variations in tones functioning as sorts of theremins,[5] while musicians controlled the result. On this interactive field of signals and feedback among the participants on stage was applied a further intervention by Paik, who manipulated the electronic transmission on a TV set. His actions appeared in acutely noisy moments in the sonic performance, when machines revealed more clearly the pink noise of their functioning and the over-saturation of multiple feedback as resulting from bodies and gestures' interactions in that electronic circuit. These noises and drones,[6] which are long and sustained tones and images obtained by manipulating the transmissions, created an uncanny suspension within the performance—a kind of "hole in space" on which we will return later. Different interactions from varied sound and visual devices suggest us an interacting use of telecommunications purposely controlled by musicians. Their live dynamics are recorded in the moment, while past, pre-recorded presences appear due to tape playback within the same shared space.

City–Links is a long-time project conceived and performed to dissolve the spatial boundaries in which musicians usually find themselves when playing in a single location, using "remote circuitry."[7] Since the *City–Links #1* experience as Creative Associate at SUNY Buffalo, Amacher started to call these projects

5 The "space–controlled ether–wave theremin" is a primary electronic music instrument patented by Russian physicist Lev Sergeevič Termen in 1920. It enables to play without any contact by moving the body in the air, "an electro-conductor […] in the electro-magnetic field" (Rockmore 1998, 2).

6 "[T]he drone as sustained vibration with only minimal frequency variations represents a significant shift of conventional thought patterns in Western culture. Such sound is based on positive feedback. In its purest sense of short wave reception, radio is a drone device that makes audible the electromagnetic wave reflections in the ionosphere. Drone suspends the arrow of time; sustained sound freezes sonic time into veritable acoustic space" (Ernst 2016b, 39).

7 Cf. documents in Boxes 1, 2, 182, Maryanne Amacher papers, Katharine Cornell-Guthrie McClintic Special Collections of New York Public Library for the Performing Arts, Dorothy and Lewis B. Cullman Center.

"long distance music."[8] She accomplished them by using telecommunications, a technology explored in the same year by Guggenheim Fellow Marta Minujín with the *Minuphone Booth* (1967—see Grespi, *infra*). In *City-Links*, the circuit among transmission and recording technologies was "opened" by telephone links that connected remote locations (sounds on input) and by telephone or wireless radio system that reconnected them to listeners (sounds output). All sources were mediated by the artist in real-time, with a multitrack mixer that is a non-linear circuit into which signals at specific frequencies are fed and from which, through the manipulation of levels and the addition of effects, a sound flow at different frequencies emerges. In terms of telepresence, in *City–Links #1* multiple tempor(e)alities coexisted in the present moment, which originated from the processes of transmitting and receiving those signals: the sonic dimension of each of the eight locations that presented sounds, with human and non-human apparitions, close or at a distance; the mixing of these sonic viewpoints as a flux; the overlapping of the broadcasted track on the sonic environment of the perceiver, that is the listener who was immersed with their body in another time-reality. Moreover, the layering of these sounds discloses different temporalities: they were broadcasted in their original duration when transmitted live from mics; they can be manipulated live in speed, this way altering the duration and changing pitch, when pre-recorded on tape; they are perceived live in a portion of their daily time and space by listeners. With the *long distance music* Amacher developed a process of being "awar[e] of presence"[9] that started from interacting from the place one was situated to another: this expanded mode of listening fosters mutual receptivity, transforming sound into a form of relational presence and communication. Later chapters of *City–Links* introduced, event by event, further types of interactions, such as musicians that were playing together in remote locations connected by telephones (*#18*, with Cage), and people that were present in different locations, in the same city (*#9, #10, #11*) or in different cities (*#15*), that were transmitted live reciprocally. Thus, the project's electronic and tele apparatus proposed to extend our receptiveness in a network of perceivers, through the exchange of multiple signals in a circuit that allowed to feel each other's presence. For Amacher, we become aware of ourselves into personal spaces while connecting with others by tele media links, a circuit that prefigures the peer-to-peer decentralized network made of connections among people in the Internet era.

8 *Ibidem*.

9 *Ibidem*.

2.4 Tele-happening: To Open the "Closed" Circuit of Mainstream Networks

Artists' experimentations with TV, such as the WGBH show *The Medium is the Medium* (1969), tested "how unidirectional broadcast television (rather than the potentially cybernetic systems of portable video) has altered human culture and behavior" (Paulsen 2017b, 30) in light of the theories of Marshall McLuhan (1964). So tele-happenings aimed to question the audience's subject position and create a differentiated perceptual experience, mostly uncomfortable, by using effects of disturbance and noise. In 1970 WGBH broadcasted Paik's *Video Commune (Beatles Beginning to End)*, a four-hour interactive television "performance" in a TV studio documented on film by Jud Yalkut. Using the Paik-Abe video synth, the first use of that kind of machine in broadcasting (Atwood 2002), the artist mixed recorded images taken by TV programming and images processed with "Beatles music played chronologically from quarter-inch audio tape" and "live vocal inserts" (Electronic Arts Intermix, n.d.). Manipulations and vocal interferences were strategies that aimed at opening the "closed circuit" of the TV network to involve differently the spectators at a perceptual dimension, altered by the formal qualities of these sonic images. This strategy became clear in Cage's *Catch 44* (1971), directed by David Atwood and co-produced by Paik, in which the first five minutes broadcasted the artist while already composing on paper during the technical test on studio, with off-screen vocal interventions by the crew and tapes that were rewinding. All these experiments grasped the "in-betweenness" of an open-ended process.

In these years, conceptual and environmental art develop similar issues, as it is documented by Nancy Holt's films and videos with Robert Smithson, or E.A.T. multimedia performances *9 Evenings* (1966) with interdisciplinary artists such as Cage and Yvonne Rainer using technologies purpose-built by Bell Labs' engineers (Piekut 2024). Artists involved in conceptual and performance arts worked with television questioning the topic of presence as participation by drawing strategies such as the system of feedback, the possibilities of the two-way transmissions, and the use of delay. They tried to accomplish interactive telepresence among subjects even if it was technically hard to accomplish with the tools of the time. In VALIE EXPORT, *Facing a Family (TV-Aktion I*, 1971), broadcasted on ORF, a family at home watching TV was actually looking the spectators off the screen, this way generating "feedback" of gazes between people seen and seeing in similar domestic set-ups. Two further points can be highlighted: the work was considered "disturbing" in the frame of TV programming ("The viewers did not expect to see themselves on television and thought it might be a malfunction in the broadcast", VALIE EXPORT 2021); initially, the artist proposed to have a two-way transmission between two families, putting themselves into the TV feedback generated by tele technologies. In Peter Weibel's *The Endless Sandwich (Tele-Aktion I*, 1969–72), a performance

later staged and still broadcasted on ORF, in a feedback of gazes the artist encouraged the spectator to stand up and repair the damaged TV that already affected the other spectators on screen, assuming the telepresence as "teleaction" (Virilio 1992, 84; Manovich 2001, 150–161). This action is possible thanks to the "time delay" created in transmission, as pointed out by the artist (Weibel 1969), that put the emphasis on the possibility of re-watching and re-mediating. Even if viewer's interaction can't be transmitted live, it can be imagined while producing such tele-actions through a conscious use of the medium made by artists, as Fabio Mauri explained during the tele-happening *Il televisore che piange* (1972) broadcasted on RAI.

The missing node with spectators in these closed circuits may produce "alienation" (Spampinato 2021, 77) or encourage connections and community-building by decentralizing the means of production with the development of DIY studios and the use of Portapak, as happened in the guerrilla television activities of Ant Farm, Videofreex, and Raindance. A special tele-happening is VanDerBeek's *Violence Sonata* (1969–70), broadcasted on WGBH, that included a spectatorial response by involving various media (two TV channels, telephones, and letters) to collect audience reactions and engage people in interacting about a critical topic in the American public debate, that of violence; unluckily, the result was contested (Paulsen 2017b). Hence, most of the strategies enacted in these years defined the meta-discursive feature of the video art, admirably highlighted in Richard Serra and Carlota Schoolman's *Television Delivers People* (1973) and widely developed in the 1980s, as acts of self-reflexivity that disclose the discursive techniques of TV apparatus (Joselit 2007; Spielmann 2008). In addition, artists showed and explained operations and tools to "make" television art to the spectators, seen as potential practitioners that were able to create a personal electronic experience. This objective of the alternative television and communities is addressed through: workshops at local TV channels and centers (e.g. Experimental Television Center); shows dedicated to video tools (e.g., *Vasulka Video* on WNED–TV Buffalo); print media written by TV artists such as journals (e.g., *Radical Software*) and manuals (e.g., *Guerrilla TV*, Shamberg 1971). These places and spaces of productions became hubs as well as alternative networks that were investing in experimentation, confirming the theoretical framework of the cultural scene.

3. A Media Ar(t)cheological Excavation: Play(it)back!

3.1 Tempor(e)al Operations with Signals and Loops: Noise, Feedback, Delay

From this second part, our research objects move from the historical exploration to the media archaeological excavation related to art practices. We

recreated contexts of production and distribution as much as of collaborations in light of a lab mindset; we explored the materiality of a series of electronic devices of signal transmission and recording from sound to video systems, which highlighted the modular thinking and the process of mixing; we analyzed two early media events that were emblematic of the use of tele media, which highlighted the issue of managing multiple presences and tempor(e)alities through techniques of broadcasting and taping; lastly, we created a gateway for a methodological move, from history to archeology, by analyzing a type of situated events that were tele-happenings, which were experimented mostly by public broadcasts in Europe and US, and by extending this action conceptually to the closed/open circuits.

Between 1963-1974 artists frequently reflected on being recorded, or recognizing themselves on a TV screen when recorded images were playback, or understanding what mean "being there or here" and in which ways we can be "here and there". They were learning, with hands-on practice, which operations were inscribed in the materiality of these technologies, since "every transmission of a signal, no matter how fast, is a temporal process" (Ernst 2016, 30). Self-mediation and time passing were explored in Lynda Benglis' *Now* (1973), where the artist shows the attempt to control the medium by commanding the operations on devices: "I said: 'Start recording,' 'Start recording,' I said: 'Start recording,' 'This image here, good,' 'Start recording, we are recording now.'" Her face and voice on screen are layered and mixed with her recorded and live actions, blurring boundaries between temporalities, and suggesting an ambiguous experience of interactivity, until the two Benglis – one live and the other recorded – question: "Now? Now! Now! Now? Is it Now?" The artist checks her presence on the image on screen, on the right, and on off screen monitor, on the left, engaging a performance through CCTV in which the "live" Benglis often repeats gestures and statements of the "recorded" Benglis, in a loop of blurred, deferred temporalities (Fig. 3). Hence, this section examines a few critical and recurrent operations with electronic media, which are noise, feedback, and delay, whose purposes were to shadow space-time coordinates, create an uncommon eerie experience, and *hack* the technological apparatus until its materiality. Even if these operations were mostly activated and processed in conjunction, I will highlight one operation at a time by exploring a selection of "video art" cases that worked on multiplying tempor(e)alities, since in video "the divisions into lines and frames are solely divisions in time […] within the flowing stream of electrons. Thus, the video image is a living dynamic energy field, a vibration appearing solid only because it exceeds our ability to discern such fine slices of time." (Viola 1990).

Figure 3. *Now* (Lynda Benglis, 1973, color, sound). Video still. Image copyright of the artist, courtesy of Video Data Bank, School of the Art Institute of Chicago.

As seen, in early times of electromagnetic transmission, disturbance characterized tele events. This also happened when experiments were conducted within the frame of a studio, for instance a technical accident was the source for Viola's *Information* (1973), "when the output of a videotape recorder was accidentally routed through the studio switcher and back into its own input. When the record button was pressed, the machine tried to record itself" (London 1987, 24). Suddenly all equipment had been oddly animated, revealing a technical dead-end and the possibility of breaking the circuit. Art critic Donald Kuspit considered this as part of the artist's general strategies to "[deconstruct] presence" through signal machines (1987, 73-80). Generally speaking, we use to ask a device to be efficient in its functioning. For this reason, noise reveals the "non-performativity" of the device as an option, something to be engaged with. Its understanding depends by the context in which noise manifests: within the narrative of a performance or a tape, it is an event of disruption, as in the aforementioned experiments with broadcasting; while, if noise is the matter of soundtrack, it is a steady parameter that stresses the absence of vectorial time. This latter is the case of *Noisefields* (1974), a piece of pure buzz in which "colorized video noise (or snow) is keyed through a circle, producing a rich static

sound that is modulated by the energy content of the video" (Electronic Arts Intermix, n.d.). Vasulkas' works were characterized by feeding sonic machine into video machine, and vice versa (Soldani 2025), and resulted from testing different chains of devices with a modular approach and a mixing practice. For them, time became a matter to deal with while processing signals, like in Woody's *C-Trend* (1973) and the duo's *Telc* (1974), made with Rutt-Etra Scan Processor (1973) to directly "manipulat[e] images in time" through manual operations (Etra in Miller Hocking 1986): here, "disturbances in multiple layers appearing simultaneously or following in short distances one after another provoke the impression of moving bodies" (Dreher 2020, 154). Thus, noise opens to indetermination in the tempor(e)ality, whether it is technological, formal, temporal, spatial, or all of these. Such artists spring noise from the materiality of machines and from feeding back systems to stretch their limits, a process of circuiting that can be compared with media-artcheological strategies such as hacking and circuit bending (Parikka and Hertz 2012; Strauven 2014). Furthermore, as evoked by Burroughs, noise is a political tool: "with noise is born disorder and its opposite: the world. […] Everywhere we look, the monopolization of the broadcast of the message, the control of noise, and the institutionalization of the silence of other assure the durability of power" (Attali [1977] 1985, 6).

Feedback is a definite form of noise connected to electronics, which is an operation experimented in music and video. "If a microphone is placed too close to its amplifier it squeals. If a television camera is positioned too close to its monitor it squeals also, but it squeals visually. This visual noise, like audio noise, is called 'feedback'" (Youngblood 1970, 174). We can think about feedback when it is injected within a network in two ways, which can overlap: feedback of concept and feedback of matter. The first one creates a short-circuit through language in the information system (*Violence Sonata*), the second one creates a short-circuit through the electronics in the perception system (*Einstine* – Fig. 4). The former often shows the framed monitor, disclosing it as a non-neutral and non-transparent *apparatus* (Videofreex, *Knitting and Feedback*, 1970; Benglis, *Noise*, 1972; Robert Morris, *Exchange*, 1973); the latter doesn't show the edges of the frame, being a technique that encourages immersion (*Global Groove*). Feedback is not only a practice of disruption, but also a strategy of connecting alternative communities by customizing technologies, as we can notice in the growth of electronic devices' patents (Dunn 1992). This has been both a way of appropriating the tools of productions, in a Marxist fashion, and a way of creating awareness on technologies in the audience, encouraging them to critically thinking and making.

Feedback is widely used and recalled in these years, especially by Vasulka and Paik. According to Hays, who worked with artists at WGBH using the Paik-Abe synth, it is "the most dynamic image" that becomes a "medium of light" (1974, 7), pure "cosmic […] energy" as Woody stated (Bell 2025, 16). Feedback

dematerializes and flattens signals: in music, the saturation of feedback creates drones, while on video that saturation generates blue light, so the (closed) circuit saturates its input with its output overlapping its own acts of presences to an infinite point. Thus, within feedback the self-circulation of presences happens in form of signals as overrun delays that compress the linearity of time. For Beck, it is "the television set in a self-meditative state. […] Input is focused on output, its eye focuses on its vision, and in this meditative state it creates specific graphic imagery. […] The role that spiritualism, mysticism, esotericism play in social and political change is crucial" (1977, 52).

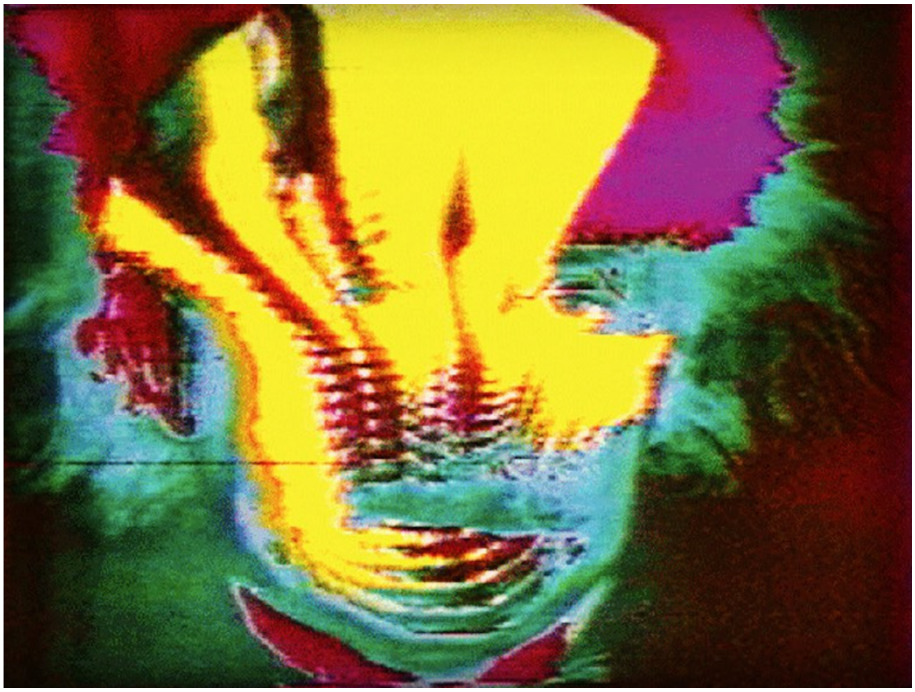

Figure 4. *Einstine* (Eric Siegel, 1968, color, sound). Video still. Image copyright of the artist, courtesy of Video Data Bank, School of the Art Institute of Chicago.

The work that made an exemplary use of delay techniques is Ed Emshwiller's *Crossing and Meetings* (1974 – Fig. 5), broadcasted on WNET, in which images were elaborated as they were affected by sound effects based on micro-repetitions, such as echo, delay, and tremolo. As Ernst puts it: "delay time […] describes the effective time consumption of every act of signal transmission" (2016a, 26). In the first part, the video complexifies the action of a performer that crosses an image from left to right, by using video mix and effects. His

doubles begin to appear repeating actions and often looking like figures echoed by the first presence; some doubles are slightly out of phase (delay or phaser effect), while others appear and disappear quickly (tremolo effect); some change colors (color parameter). A mass of his echoed presences suddenly appears as if the rate of repetitions in the delay effect is highly increased. When the female alter ego appears, the inlaid sequences play on characters reappearing in delay; when the couple is alone, both stage the synthesis of an encounter, Then the scene is repeated in playback with dissimilar outcomes: with their speech is in reverse; with his voice at normal duration while her in reverse; with voices in slow motion and then sped up; with normal duration and reduced duration mixed by changing tape speed; with the three temporalities of multiple speeds superimposed. These processes are "chrono-techniques:" "freezing, fixing, replaying, decelerating, and accelerating are practiced with the stop, play, rewind, and fast-forward buttons on tape recorders, video recorders, and their iconic emulation as software" (Ernst 2016a, 8). This formal experiment not only reinforces the inner relation between sonic and video technologies, but mostly shows video's ability to create "an intensification of the temporal moment" (Ernst 2016a, 12).

Figure 5. *Crossings and Meetings* (Ed Emshwiller, 1974, color, sound). Video still. Image copyright of the artist, courtesy of Video Data Bank, School of the Art Institute of Chicago.

3.2 Sonic Imaginaries and Virtual Experiences

November 23–24, 1990, Italian curator Maria Grazia Mattei organized the conference "Mondi Virtuali: Realtà Virtuali" in Venice, involving key figures of Western cultures such as Paul Virilio, Derrick de Kerchove, Philippe Quéau, and Timothy Leary, to deal with such topics as virtual worlds and artificial reality. Among them, the sci-fi writer William Gibson was called to discuss the concept of cyberspace, which firstly appeared in his short story *Burning Chrome* (1982). The writer recalled that his main reference in imagining the cyberspace was an audio portable device, the Sony Walkman, "a little gadget that plays pre-recorded cassettes of virtual experience."[10] Tape technologies fueled Gibson's sci-fi imaginaries since its first published story, *Fragments of a Hologram Rose* (1977), in which a kind of "domestic tape deck" becomes "a method of recording [stimuli to be] replayed", enabling to experience manifold realities through the sensory feedback: "I turned the vivid portable auditory universe of the Walkman into an identical device replaying the full bandwidth perception."[11] Thus, in the cyberspace a tape recorder, as a portable device of virtual reality, becomes a perception's interface connected with bodies in a circuit. In this way, memories of a recorded event as well as fictional memories inducted by media are looped in a closed circuit, because "consciousness is never solely in the present; rather, the accumulation of past image impressions and remembered sounds modulates the perception of the present" (Ernst 2016a, 159).

Going back to the examined historical period, we can find other sonic imaginaries related to the electromagnetic media of storage and transmission. In *Electronic revolution* (1970), William Burroughs underlines the key role of recording, cutting, and playing-back tapes mostly in the public sphere as a political strategy, since "the control of the mass media depends on laying down lines of association. When the lines are cut the associational connections are broken" (1970, 16). He also explains his method to act with those devices dislocating, in urban spaces, several decks with tapes previously recorded there, to be played loud at different times of the day. Hence, Burroughs advocated for the use of taping techniques to operate a disruption in the semantic order of urban life: he activated a density of multiple critical tempor(e)alities by pressing "record," "rewind," "stop," and "play." In fact, tape technologies are based on gestures and non-linear techniques like rewinding and looping that challenge the "phonographic regime," which considers "sound recording [as] an act of inscription", since tape, erasable and reusable, "order[s] non-chronological events along a narrative to be unspooled, heard closely, and reformatted" (Bohlman and McMurray 2017, 8, 9).

10 Cf. video n. 2169 "Convegno 'Realtà Virtuali' - Fortuny Venezia '90 – II parte", *The Roots of the New* Archive – MEET | Digital Culture Center.

11 *Ibidem*.

We can also recall an essay by Marshall McLuhan with Edmund Carpenter that connects the concept of "electronic space" to that of "acoustic space," because electronic media have an "implicit acoustic structure," which is generated from telephone and radio technologies, and because "auditory space [is] immersive and filled up" (1960, 67–68). Indeed, the transmission on analog TVs was a fact of tuning to the right radio wave and frequencies (VHF, UHF) to broadcast a channel, receiving at home what Viola called "the sound of one line scanning." Thus, presences transmitted through electronic media are originated by means of acoustics, at a distance of space and time.

3.3 Atomizing Nowness: Echoes and Drones as Portals to Alternative Tempor(e)alities

According to Ernst: "electronic storage media create presence, as their updated signals are able to address human sensory nerves. The past is thus operatively sublated […]. Electromagnetic transmission and recording media operate in a transitive, flat time—at the level of their technology (as the sampling of signals in the micromillimeter range) as well as their sensory address to the sense of time" (2016a, 109). By these words, we can see the prefiguration of the overlapping among cyber, electronic, and acoustic spaces through the micro-temporalities of tape technologies and signal treatments in Steina's *Orbital Obsessions* (1975–77; revised 1988).[12] The work was crafted inside her Buffalo's studio—fully equipped with CCTV systems, electronic instruments and modules—and it included excerpts from *Signifying Nothing* (1975), *Sound and Fury* (1975), *Switch! Monitor! Drift!* (1976) and *Snowed Tapes* (1977), all mixed in an indistinct flux. Steina declared: "In this series the camera conforms to a mechanized decision-making of instruments... I am also paying attention to time accumulation, in a mix of real time with time inherited from each previous generation of pre-recorded and then re-taped segments" (Electronic Arts Intermix, n.d.).

In the video, her first action is to explore the CCTV system as a surveillance technology by recording techniques of observation (see Galimi, *infra*). Behind Steina there is a wall of 7–8 monitors connected to Woody's camera that is capturing her while orbiting around a camera that rotates 360° on its tripod. While Steina follows its movement with a CC monitor, below the tripod two open-reel tape records and playbacks. After a few seconds of feedback, disturbance and keyed spectral presences appear randomly. Then the video mixes Steina's front and rear views in real time as she rotates around the camera, concealing her positioning according to the classical perspective (as in *Violin Power*, 1970–78). While the electronic sound generated by the optical machine overlays that of classical music, the image of the rotating camera is mixed with that of the

12 The full version of the work is available here: https://www.fondation-langlois.org/html/e/page.php?NumPage=486 (accessed February 5, 2026).

recorded images in CCTV as it rotates, until Steina stops it with her hand. Then, the noise of the machine's mechanism in rotation blends with the noise of the tapes running. A feedback rotation between the camera and the monitor reveals Steina's figure that moves with a latency—spatial, gravitational, and temporal references become lost.

What is the orbiting camera seeing? Steina explores her bodily presence in this viewing system, on the inlaid images, recorded and reproduced on tape, that belong to another space and time. When the rotating inlaid image passes, it brings to a different shot. Here the sound becomes more electronic and mechanical, while the inserts from the second camera divide the frame more frequently. After an initial, fleeting appearance by Steina, who is checking the audio levels with headphones, the living spaces looks emptied—that studio-home, between monitors and kitchen, where Woody ate a little earlier. Only the machines are still orbiting and interacting within the circuit, including the tools that are mixing the images. The working on luminance key and solarization effects, as processes shaped by machines, renders heterotopic the space, a familiar and unfamiliar locus where Steina's ghostly presence reemerges sometimes. Moreover, the uncanniness and the disorientation of these images are exacerbated by the rapid mix of inlaid and moving scenes.

The manipulation of temporality between transmission and tape reproduction is evident in the segment in which each image oscillates between the moment that precedes it and the moment that comes after it, following its oscillatory nature and denying the idea of present as a stable, unified event. Finally, Steina appears/disappears/reappears to return to the knobs of the workstation, her figure also affected by video scratch (Ravesi 2025). When tape seems to freeze, two Steina appear in two different times: the "live" Steina overlaps the "taped" Steina, and this "echoed" Steina manipulates the time-rate control of tape playback, in a similar way Riley and Oliveros did with their time-machines. Steina has worked with a wired connection camera-monitor, which was a livest technology in the circuit, and with broadcasting and taping, which have displayed a visibile latency in the former case and a deliberate delay in the latter, to operate with on purpose—to navigate this inbetweeness aware of presences.

Between the end of the 1970s and the 1980s, in times of actions with broadcast and CCTV, a series of satellite experiments were attempted, launching telematic art. They were multimedia events centered on hybrid systems of telecommunications that involved mostly analog technologies and a computer. Kit Galloway and Sherrie Rabinowitz created a series of interactive media events by using orbital system of transmission. The analyses of a series of events recorded on the videotaped documentation will follow in relation to key operations that are outlined in this section, also in comparison to *Orbital Obsession. Satellite Arts Project* (1977)—whose video engineer was Bill Hearn—was the first experiment managed in collaboration with NASA. Sequences of dancers in different

locations result in performing together on the screen due to mixing and using effects as chroma key and split screen (Fig. 6). As Paulsen outlined (2017b), the major challenge in the project was latency, which questioned the real possibility of attaining simultaneity in communicating between two distant sites. Then image becomes a place of encounter, for meeting each other in the temporal lag between movements, which is exactly what happened when Steina meets herself at a distance of time rather than of space. Furthermore, the three artists question the extremes of latency since "a spatio-temporal entanglement here comes into play ('live' transmission bridges distance in space, storage bridges distance in time)" (Ernst 2016, 160). What Galloway and Rabinowitz probably were still testing, after they assumed the technical issue, was how they could remotely control bodies in the circuit and perform within the lag. This underlines a subtle difference between latency and delay, where the former manifests an unintentional temporal gap and the latter performs an intentional temporal effect. At almost the end of the video this shift is suggested: a liberating dance in the electro-acoustic space is consumed as the dancer moves in relation with her own delayed feedback; sometimes she moves in unison with her multiples, sometimes, with rapid movements, she creates a choreography taking advantage of the delay and moving with a multitude of herself in virtual space (Fig. 6, last still).

Figure 6. *Satellite Arts Project* (Kit Galloway and Sherrie Rabinowitz, 1977, color, sound). Video stills. Image copyright of the artist. Source: ResearchGate, image licensed CC BY-SA 4.0 Attribution-ShareAlike 4.0 International (accessed February 5, 2026).

Hole in Space (1980) was a telematic event whose "video tape document[s] an unannounced, live two-way satellite transmission which took place between LA and NYC on November 11.13.14.1980 for two hours each evening,"[13] a tele-happening on screens located in shop windows. In respect to *Hello*, they accomplished a frontal view between distant subjects, even if each other's gazes

13 Opening titles cf. video n. 323 "Hole in Space - Virtual Space Electronic Café", *The Roots of the New Archive* – MEET | Digital Culture Center.

were still unable to meet. The b/w cameras of this closed circuit couldn't properly process low exposed images without adding noise, resulting in unfamiliar images of familiar places that where framing public encounters of strangers and relatives—"just like you see on a telephone," as a guy declared. Latency, noise, and the b/w tint of the surveillance system soaked the electronic images, going beyond the excitement of these meeting "at a distance" and leaving spectators of the recorded event, still "at a distance," a bit in discomfort. In a mediated condition of dromology, the distinction between past, present, and future has been "surreptitiously replaced by two tenses, *real time* and *delayed time*" (Virilio [1988] 1994, 66), and these "two separate time forms of previous vision machines […] entangled in the electromagnetic event of the video image" (Ernst 2016, 114, 163).

But this "hole in space" opens to further possibilities, for autonomously creating close and distant communities and gathering networks through "unannounced" media events, like tele-happening, something similar to what anarchist writer Hakim Bey will later theorized as the "temporary autonomous zones" (1991), a key influence for cyberpunk and hacking movements. Today Goodman (2012), known as the DJ/producer Kode9, recalls actions to be at play in a sonic warfare of military devices: that of EDM vibrations and noises.

4. Conclusions: on "In-betweenness", or Experiencing Audio/Visual Time Lag

Since 2016 Lori Emerson has conducted research on "other networks"—the networks that prefigured the Internet—with the purpose "to examine how they did and still could offer profoundly different experiences of communicating at a distance" (2025). Amid a political paper related to who owns and regulates the power (infra)structures that have been modeling our subjectivities and relations, also with implications in terms of race and gender (see Galimi, *infra*), she enquired: "how do we prevent the 'precorporation' of imaginary networks?" She proposes a handful of case studies that make independent uses of frequencies such as pirate radios (on radio and telepresence see Dotto, *infra*), which are still installed today with FM transmitters, to make community building—using what most of us are considering an "obsolete" technology.

With the first telematic event *Electronic Cafè* '84, and the subsequent chapters as Electronic Cafè International (ECI, 1988–2000), Galloway and Rabinowitz finally created what, in their own words, was an "interactive cyberspace," "a real cafè," "a network," "a global community," "a sort of electronic commune,"[14] a project that remediates the experiences of cable channels and guerrilla television

14 Cf. video n. 322 "Electronic Café", *The Roots of the New* Archive – MEET | Digital Culture Center.

of the 1970s such as Videofreex' Lanesville TV. November 14, 1994, ECI staged what *The New Mexican* journalist Hollis Walker defined a "Cyberspace concert:" "Musicians in California, New York and Santa Fe collaborate with the help of computer and telephones lines […] The event used phones lines to transmit videophone still photos and the musical and spoken audio signals generated at all three sites. Computer modems were used to transmit musical instrument digital interface (MIDI) signals. The musicians performed by triggering electronically produced in music and images" (Walker 1994). The teleconcert involved Subotnik, live from the Kitchen in NY, and Steina, live from Studio X in NM, plus other musicians in CA, and was supported by AT&T (ex-Bell Telephone Co.). It was presented as: "the world's premier electronic musicians performed the first ever simultaneous teleconcert from three locations before audiences in those cities" (Walker 1994),[15] underlining the technical noisiness also recalled by artists and engineers working with signal transmission devices in the 1960s (Piekut 2024). Furthermore, according to *Village Voice*'s journalist Kyle Gunn, "an approximate one-second delay in the signal between New York and California [made] exact synchronization difficult," while "Subotnick ran MIDI pianos at the Kitchen and in Santa Monica by remote control, squeezing sensors in his hands" (1994). *Los Angeles Times* journalist Josef Woodard commented: "Long before the Internet became a household word to be feared and respected, multimedia artists and techno-pioneers were busy trying to connect the dots" (1994).

In fact, 1960s and 1970s performances and videos with tape, delay, and echo systems were able to transfer presences in multiple tempor(e)alities due to electromagnetic technologies. What artists understood while crafting and testing those "other networks" was that electronic media of transmission and recording enable to generate collective temporary-storage actions, in which—close or distant, in space and time—presences were perceived as in-between, mainly due to the act of listening. Even when the operator was a single person, it was possible to re-animate presences through the technical means of signal processing and delayed time. Thus, how do we prevent the precorporation of other networks? These artists suggest(ed) by looping tele-presences and creating redundancies, triggering strategies related to time lag to face dromology.

15 We acknowledge that in November 1991 Oliveros accomplished a tele-performance among six US cities, by connecting the locations via telephone, with a simultaneous collective impro (Oliveros [2007] 2010, 192).

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The Impossible Now: Limit Telepresence and Robotic Entanglement on Mars

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Abstract

This article investigates the conceptual and aesthetic effects of "limit telepresence" created by communication with Mars. The vast distance between Mars and Earth makes any notion of real-time presence or a stable shared "now" impossible. This scenario exposes the temporal contradictions at the heart of all telepresent encounters, illustrating that "now" is always some version of "then." Looking to artists David Bowen and Minna Långström, who collaborate with NASA engineers and use Martian data in their works, the essay argues that these conditions of spatialized time and temporalized space produce unique aesthetic features that stretch the duration of the instant and demonstrate how telepresence is an experience of the past mistaken for the present.

Keywords: Telepresence; NASA; Telerobotics; Robotic Art; Mars; Video Art; Presence; Time; Interplanetary Communication; Human-Machine Interaction; Eye-machine

Abstract

Questo articolo indaga gli effetti concettuali ed estetici della "telepresenza-limite" creata dalla comunicazione con Marte. L'enorme distanza tra Marte e la Terra rende impossibile qualsiasi idea di presenza in tempo reale o di un "adesso" condiviso e stabile. Questo scenario mette in luce le contraddizioni temporali che si trovano al cuore di ogni esperienza di telepresenza, mostrando che l'"adesso" è sempre una qualche versione di "allora." Analizzando il lavoro degli artisti David Bowen and Minna Långström, che collaborano con ingegneri della NASA e utilizzano dati provenienti da Marte nelle loro opere, il contributo sostiene che queste condizioni di tempo spazializzato e spazio temporalizzato producano caratteristiche estetiche uniche, che dilatano la durata dell'istante e dimostrano come la telepresenza sia un'esperienza del passato scambiata per esperienza del presente.

Parole chiave: Presenza; Tempo; Comunicazione interplanetaria; Interazione umano-macchina; Occhio della macchina

For three months a Martian wind blew in Southern California. Tucked into a corner of Glendale's Brand Library Gallery, dozens of dry stalks of tall grass tilted and swirled in what wall text claimed was the weather of another world. Long stretches of near stillness and uneventful, trembling calm would suddenly break into dramatic twists of collective action. The artist behind this work, David Bowen, planted one hundred twenty-six individual stalks of an unidentified variety of tall grass into small metal and plastic mechanisms that maneuvered the shafts in response to data collected by the Mars Environmental Dynamics Analyzer (MEDA) on NASA's Perseverance Rover.[1] The kinetic sculpture appeared in the exhibition *Blended Worlds: Experiments in Interplanetary Imagination*, organized by NASA's Jet Propulsion Laboratory (JPL) as part of the 2024 edition of The Getty Museum's expansive, multi-site program, *Pacific Standard Time*. The scene was one of strange contradictions. The tangled, root-like ropes of electrical wires appeared both chaotic and overly systematized.

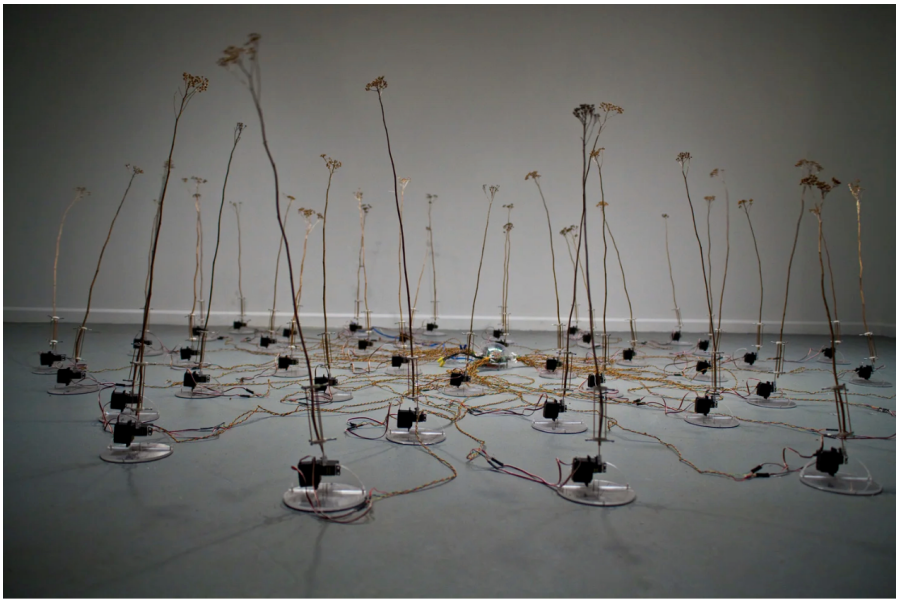

Figure 1. *Tele-present Wind (Mars Wind Version)* © David Bowen (2024). Courtesy of the artist.

1 Bowen worked in collaboration with the Jet Propulsion Laboratory and Dr. José A Rodríguez-Mandredi, lead scientist on the Mars Environmental Dynamics Analyzer on Perseverance (Bowen 2024).

The organic, rustic materials rustled noisily in competition with the electric hum and mechanical clicks of their artificial supports. Natural light from adjacent windows dappled an agrarian scene that had no need for it. The modest exhibition space, raucous with the competing soundtracks of the video works playing in other rooms, did not seem grand enough for such a cosmic haunting.

Bowen's *Tele-present Wind (Mars Wind Version)* (2024) (Fig. 1) is an odd spectacle to watch and, moreover, to feel. I visited the installation on multiple occasions in October 2024 and, therefore, experienced at a distance several days of local Martian weather. Each time the ersatz meadow would build from random quiver into sweeping whorls of synchronized movement, I allowed—even encouraged—myself to imagine my body onto the surface of Mars in the same place as our robotic surrogate, Perseverance. In the absence of an actual breeze, the somatic sensations triggered by the dry whisper of the grass were strangely evocative of weather or, at least, the experience of it from indoors. The sudden shift of sound from the parched, shivering vegetation sent involuntary prickles across my skin, triggering that "low-level euphoria" associated with autonomous sensory meridian responses (ASMR).[2] Like most people who surf the constant streams of visual data that flow down to Earth from NASA's many apparatuses on and around Mars, I can call to mind the terrain and environmental conditions that might surround Perseverance in Jezero Crater, or as much as one can claim to do so from video and screen images, those windows that lead to other worlds. Through rover eyes, I've seen dust devils miles wide sprout on distant horizons, tearing up the ground in a riot of rusty debris. They alight across the landscape, tracing the contours of buttes, hilltops, plains, and mountain ranges, bringing movement if not life, per se, to the empty landscapes that surround our lonely robots on their endless sojourns. Perseverance (2020–), Curiosity (2011–), Spirit (2004-2010) and Opportunity (2004-2018) have been prostheses for experiencing this distant world and making it familiar—even ordinary—in the ways they present this endless alien desert in the deluges of media they beam down from the heavens. Through their distant, mechanical bodies, Martian vistas appear like the red rock deserts of the American Southwest and other colonial landscapes that have been photographically framed by geographers, prospectors, and explorers.

2 Dr. Nitin K. Ahuja describes the effect of ASMR (autonomous sensory meridian response) as reliably producing the feeling of "low-grade euphoria in response to specific interpersonal triggers, accompanied by a distinct sensation of 'tingling' in the head and spine (akin to a mild electrical current, some say, or the carbonated bubbles in a glass of champagne)" (2013, 443). The combination of scratchy, dry noises and mechanical hum in a Tele-present Wind elicited something similar in me. Ahuja's connection of ASMR to the sensation of an electrical current is evocative, here, as one might feel connected to the electronic signals broadcast from Mars.

But what is it I actually feel when I remotely experience this wind from another world? Certainly, there is no wind, but movement stands for it by analogy. I am encouraged to imagine a simultaneous experience with Mars when I know this is impossible. The Martian atmosphere is so thin that 100 kph winds might cause but a small breeze.[3] Are the grasses moving to the degree they would move on Mars, or are they converted to an earthly atmosphere? It seems bizarre or ironic that vegetation, a complex form of life—even if dead in this display—serves as the medium for this translation and presumed collapse of here and there. No wind on Mars has ever been registered by the bend of a reed. It is utterly unimaginable occurance without projecting oneself into a fantastical future or unknown (and implausible) deep past when Mars might be teeming with life. There also seems to be a reversal in this scenario as well: someone—or something—on Mars is controlling a machine on Earth, rather than the other way around.

The wall text for Bowen's project claims that the "stalks move in synchrony with the Martian wind, temporarily uniting Glendale with Mars through the dynamic interaction of wind and motion." The idea of synchrony put forward here leans ambiguously on the phrase "tele-present" in the title of the artwork, which, conventionally, indicates a live—or functionally live—auditory, visual, or haptic connection to a distant place, such that one feels present or has remote agency at that site. Telephones, television, and telerobots are just some of the more and less familiar devices that deliver these real-time experiences of connection. Mars is on average, however, one hundred and forty million miles away from Earth, and signals take anywhere from four to over twenty minutes to travel one way between the planets (NASA 2024a). This lag makes any notion of real-time telecommunication impossible, and both casual and expert encounters with Martian data stretch the limits of what we might consider presence in a mediated elsewhere.

Yet, in this essay I want to explore the far edge of presence experienced through remote devices, such as Mars rovers and the sensors that collect and deliver data back to Earth, and examine what it takes to experience embodiment through them, what I call, here, "limit telepresence." The control of Mars-based robots complicates and attenuates our understanding of presence and telepresence, as well as any stable concept of a shared "now." To experience presence at radically distant places through these devices, I will argue, requires stretching the duration of what one considers an instant. In doing so, weird kinds of time emerge that both rely on and produce aesthetic effects. To explore this aspiration and its effects, I will look to the work of both engineers

3 Mars's atmosphere is only about 1% of sea level pressure on Earth. "[T]o a human standing on the surface, this would feel more like a light breeze than a tropical storm" (Mars Education at Arizona State University, n.d.).

and artists, and collaborations in between that aim to inhabit and hold open the strange temporal and spatial dimensions of "limit telepresence."

1. Limit Telepresence

In a 1980 article published in the pop literature and science magazine *Omni*, MIT computer scientist Marvin Minsky (1980) famously outlined his concept of telepresence for a general audience. Inspired by the work of science fiction authors like Robert Heinlein, Minsky departs from the terms commonly used by engineers and scientists, such as "teleoperator" or "telefactor," to stress the importance of "feeling" one is present in another place by way of networked sensors, actuators, and displays (47). Interactive computing and real-time physical simulation could transmit one's physical agency into a distant location, allowing for remote sensing and manipulation of an environment. The biggest challenge—and greatest achievement— for telepresence would be, he argues, to provoke the sensation of "being there" (48). Minsky opens his article with an evocative description of a future technology: a suit that simulates the wearer's motions in another place by means of "mechanical hands" (45). "Using this instrument," he muses, "you can 'work' in another room, in another city, in another country or on another planet" (45). While he primarily envisions telerobots working in dangerous and inhospitable places here on Earth—such as nuclear reactors, ocean trenches, and underground mines—off-planet uses appear consistently throughout his essay, from imagining the long-term exploration of the Moon with telerobots rather than human astronauts to the robotic assembly of space stations, and calls out several missed opportunities on recent off-world ventures. He laments that despite recent manned missions to the Moon and a short speed of light delay in signal transmission, no permanent remote-controlled robot was left behind, he laments (49). The Viking missions to Mars (1975), the first to successfully land on the planet, illustrated, Minsky argues, "how much could be done with remote control" and the "pathetic limitations" of the spacecraft NASA sent were (48).[4] Even so, the Viking landers were the first to produce situated, embodied images from the ground of a world no human has yet touched, and paved the way for the rovers that would be more responsive and reactive.

Although most of his article focuses on the work that robotic hands and arms could do, Minsky makes special note of a "telepresence eye" that delivered

4 Minsky laments that the Viking spacecrafts had "pathetic limitations. There was no way to reconfigure the equipment to make use of what was learned; a week of breathless planning was required just to get Viking 2 to turn a stone over" (1980, 48). He acknowledges the near day long delays in data transmission but implies that this will not be a barrier to remote control and telepresence on Mars, as we see later in this essay with drivers embodying Curiosity and Perseverance.

an embodied sense of vision to a remote user, indicating how vital vision is for a sense of presence in this world or others (1980, 50). Theorists of telepresence who followed in Minsky's wake, such as artists Roy Ascott and Eduardo Kac, would broaden the kinds of technology that could deliver telepresent experiences, typically centering a visual experience, be it of text or video images. Writing in the 1980s and early 1990s, Ascott downplayed the role robotics or remote action must have in telepresent scenarios and argued that any use of telematic technologies—which he defines as "the fusion of computers and telecommunications systems" ([1993] 2003d, 258)—could induce an experience of remote presence. Ascott includes a wide variety of media and devices in this list, ranging from "hypermedia" to "teleconferencing." Fascinatingly, he does not stress the real time interaction that "tele" usually implies when attached as a prefix to any technology's name. The television, telephone, telegram are technologies that appear to fold space to provide instantaneous extension of a sense via media: one sees at a distance, hears at a distance, or writes at a distance and the medium delivers those effects to a receiver immediately. Rather, Ascott's interest in the internet and early web, which have the possibility to transmit information immediately but are often experienced at a lag (the email is transmitted and delivered with apparent instantaneity but is read at a delay when the receiver has time) leads him to emphasize asynchrony in telematic technologies.[5] He repeatedly describes the experience of telematic connection as creating an "out of body" experience in which one is "in a timeless sea."[6]

Ascott's emphasis on asynchrony and timelessness seem opposed to a generic description of telepresence, which in the words of Eduardo Kac, another of its early artist-theorists, privileges "real time over real space." (Kac [1993] 2005a, 136). Despite this tidy catch phrase, Kac also allows for asynchrony in his description of the most profound experiences of telepresence, especially with remote controlled robots. His 1997 essay "Live from Mars" records his immediate reactions to seeing images from the Mars Pathfinder of the robot Sojourner situated in the alien landscape. The still images, he writes, are "significant, overcoming real space (119 million miles from Earth) with near real-time contiguousness. Their meaning does not arise from cinematic entertainment but from the raised awareness of the universe we have gained by being collectively telepresent on the Martian surface" ([1997] 2005b, 187). Kac stresses,

5 See for example Ascott's quotation of Jacques Vallée about computer conferencing in "Art and Telematics", especially as he contrasts this kind of immediate but asynchronous connection with images from space: "'In any other medium (and even in the television pictures [of Saturn] we are seeing from Voyager) the sense of time and space is always present. Not so in computer conferencing since we truly link minds wherever they are, and the sense of time is lost rapidly in the group interaction that transcends it'" ([1984] 2003a, 188).

6 These phrases appear repeatedly throughout Ascott's writings on telematics (see [1984] 2003a, [1989] 2003b, [1990] 2003c).

here, the feat of overcoming such a vast distance in "near real-time" to create a "de facto window onto the world" (187). This is a world—more, a "universe," as he states above—that we have "gained," he argues, through our occupation and the situated, embodied views taken from a first-person perspective. At other moments in the essay, however, he notes just how disjointed both time and space were in this remote connection. It took, he records, ten minutes for the data to reach Earth, and another thirty "to process the data stream into images" (188). Kac's elated description of the experience of seeing images beamed from Mars swings between claims of real-time copresence and noting the precise delays of data transfer. Kac writes:

> As the first color images were unveiled—again live on CNN [Cable News Network], approximately one hour after arrival—I was struck with the realization that what I was seeing at that very moment, in the privacy of my own home, was exactly what the surface of the fourth rock from the sun looked like one hour ago! Twenty-one years ago Viking gave us our first glimpses of the red planet. Today, through this near real-time experience, Pathfinder gave us a sense of being telepresent on Mars. While it took the spacecraft seven months to travel to Mars, the near instantaneity—given the relative distance between the planets—of the telecommand, remote response, and image retrieval touched us with a renewed sense of proximity beyond the material limits of physical space. (188)

This passage captures some of the giddiness I, too, feel when looking at NASA's rover images and indulging in the swooning sensation of seeing another world from the kind of situated perspective that typically presupposes a human presence. It illustrates just how hard one must work to square this out-of-joint temporal experience with real-time expectations of telepresence. "Instantaneity" becomes relative. An hour lag is immediacy when reaching toward something as far as Mars. Later in the essay, Kac will briefly suggest that perhaps there are "aesthetic features unique to this telepresence event," specifically citing the strange relativity of space and time (189).

The aesthetic features of limit telepresence are caused by the spatialization of time and temporalization of space. These may also be, however, the features of telepresence itself. At the outer limit, where instant transmission of signals is impossible and the telepresent experience should fall apart due to the frustrating interruptions of signal latency, what emerges is the paradox of all telepresent encounters, the secret hidden at their heart: there is no "now."[7] Lag time is an inherent aspect of telecommunication even if one cannot perceive the delay. Now is always some version of then.

7 Early artistic experiments with satellite transmission of video by Mobile Image (Kit Galloway and Sherrie Rabinowitz) or Nam June Paik brought the inherent latency of communication into the foreground of their work as an aesthetic feature. Their works, which I have written about elsewhere (Paulsen 2017, 2024), dramatize the time it takes to eradicate space.

2. The Impossible Now

Kac's 1990 example of the twenty minute one-way signal latency with Mars raises the question of how long the instant can stretch and still be considered a shared "now" of a telepresent encounter. If a command is sent to a rover on Mars it could take close to an hour to receive data on even the smallest action. Commands made from an engineer's now will not reach the robot until sometime in the future; the robot's now, once made known on Earth, is already thoroughly in the past. When we reach so far, the very concept of a "now," of copresence and simultaneity becomes slippery. When actions stretch to the interplanetary scale, past, present, and future become muddled in a "weird time" that challenges the distinctions between them.

Theoretical physicist Carlo Rovelli has explained that it is impossible to share anything like a present or a "now" with something so far away. "Now" is an indexical condition, dependent on context. "The notion of the present refers to things that are close to us, not to anything that is far away" (Rovelli 2018, 43). It is, he writes, "subjective" and "an illusion." Such a realization helps one grasp, moreover, how the perception of a directional "flow" of time, from past through present to future, is a "generalization that does not work" (2016, 60). "The 'present,'" he writes, "does not extend throughout the universe. It is a bubble that surrounds us" (2018, 44). We can easily consider all of Earth as currently in our bubble of now (though this may not have been the case in times past with different modes of communication). The past, he explains, is "all the events that happened before what we witness now." The future, on the other hand, are the events that will occur "after the moment from which we can see the here and now" (2018, 44). The present appears to be an instant shared by everyone, but it does not stretch very far; or, to stretch it far, one must expand the duration of what one calls an instant.

The present, or the "now" I've just referred to, in Rovelli's words, "is an interval that is neither past nor future and still has duration" (2018, 44). This duration is variable relative to the distance of the bodies aiming to share a now. It could be, according to Rovelli's numbers, eight years with Proxima b or millions of years when reaching toward the Andromeda galaxy, and 15 minutes with Mars (2018, 44). All these numbers are the rough estimations of how long it could take for a signal to travel to a location and back. They measure the variable length of an instant.

Telecommunicating with Mars dramatizes this condition of the elongated now. Yet earthlings do not just send pictures and images to Mars; they telecommute, too, driving the semi-autonomous vehicles that have crisscrossed the planet's surface since Sojourner's arrival in 1997. To control the distant rovers, engineers work in and out of time. Given the time delay, it is impossible to drive the rover in real time, even if one accepts the lengthened moment of the

interplanetary now. Whether a quick eight-minute instant or a long forty plus minute delay, receiving feedback on every step of a rover's movement is impractical. Drivers send up batches of commands to execute, a day's worth at a once, and then receive information on the results of those commands after the end of a rover's workday. Teams of drivers work three-month shifts controlling the rovers. During those stints, they adjust their clocks to live and work on Mars time. A Martian sol, or rotation, is roughly forty minutes longer than an Earth day; so, when on duty, drivers add forty minutes to their day. They slowly drift out of sync with the world that surrounds them. At the end of their tour, they are living two full days in Earth's past to attempt to be present in an elusive, stretchy Martian now. And because the drivers and science teams need to have all their commands ready for uplink at the beginning of a rover's workday (8:00 am Mars time), they work the night shift. They become nocturnal Martians living on Earth.

In the 1990s Kac suggested that telepresent encounters with Mars imagery would have "unique aesthetic features" because of the way latency, delay, and asynchrony are inherent in the process. The scheduled data transfers adjusted for Mars times, described above, also imply that the Martian wind David Bowen brought down to Los Angeles for me to feel on October 15, 2024 was not just fifteen or forty minutes old, but a day or more out of sync, stretching not just one hundred and forty million miles but spanning the distance between a day and a sol. To attempt to feel this wind blowing across space and across time is to step into the impossible now of the elongated present.

3. Lag Times

The live connections familiar from telephone calls, video conferencing, television broadcasts, and other telematic technologies have habituated users to expect the seamless eradication of distance, even to the Moon and back. Any lagging phone call, however, immediately reminds one of how fragile that sense of connection is. Words pile up, partners' apologies for interruption overlap, until both give up in the communication breakdown. It is difficult, however, for most people to perceive delays of less than a few tenths of a second (Rovelli 2018, 44), and we habitually ignore the near half-second lags that are an inherent condition of our satellite telecommunications technologies.

Nicole Starosielski and Grahm Candy have theorized "the visceral, emotional, and physical" responses users of technology have when they feel their data feeds slowing down, especially regarding systems which they expect to deliver instantaneity" (Graham Candy quoted in Starosielski 2015, 61). Whether characterized by distorted images, out-of-sync sound, or slow loading speeds, Starosielski notes how these delays and glitches make the unseen infrastructure that supports these systems visible. "Lag and distortion are not merely products

of distance" with our terrestrial communications infrastructure, Starosielski writes (62). Rather, they typically indicate "when content is not efficiently transmitted" (56). She calls the effects and affects produced by these delays an "aesthetics of lag" (56).

Neta Alexander picks up Starosielski's term to describe the "phenomenological mode of waiting" produced by buffering and the complications it introduces into "our understanding of immediacy, agency and control in the age of 'connected viewing'" (Alexander 2017, 2). Buffering, she writes, typically produces feelings of "frustration, anger, and sometimes even rage (especially if, and when, one expects transmission always to be seamless)" (13). Both Starosielski and Alexander acknowledge that "'waiting' is a relative term; it can mean something different depending on different expectations and circumstances" (Alexander 2017, 8). One's tolerance for the loading of a webpage in 1995 or 2005 would differ greatly from expectations in 2015 or 2025, just as rural internet users in infrastructurally underdeveloped areas might have different notions of slowness or thresholds for tolerance than those in a large, industrialized city. Alexander connects the displeasures of buffering, however, to the "unpredictable and unknowable length of the disruption" which insulates the aesthetics of lag from effects of nostalgia, intimacy, or artistic pleasure that often accompany creative and experimental uses of noise, glitch, and distortion (13). Alexander, like Starosielski, is only addressing quotidian media encounters, not anything so rarified and exceptional as receiving information from another planet, in which case the primary lag is due to distance and speed of light signal latency. As such, there are distinct differences between their conceptualizations of the aesthetics of lag and all its unpredictable frustrations and Kac's delight in experiencing the elongated time of limit telepresence. While the latency varies in accordance with the relative positions of the planets, it is always known and predictable. It takes time to stretch oneself to inhabit a distant rover. Processing data into human-readable images, too, takes measurable—sometimes long—times, as Kac notes in his calculations of what immediacy means when viewing Mars. Even so, I would like to hang onto Starlosielski and Alexander's concept of the aesthetics of lag to understand what it takes to experience Martian data and to stress that, because the temporalities of delay are known and expected, the elongated instant of limit telepresence activates different aesthetic, affective, and experiential registers than buffering, throttling, or drag in terrestrial communications. Experiences of lag in our commonplace media produce frustration and productively call attention to the formal properties of the infrastructure that undergirds experiences of networked immediacy through formalist experiences of distancing and alienation. The aesthetics of lag in limit telepresence as so evocatively described by Kac, on the other hand, demand that one stretch across space and time to inhabit another world. This takes a patience so extreme that it becomes difficult to parse past, present and future.

4. Robotic Entanglements

Writing the instructions to control a rover requires other awkward orientations in addition to living on Mars time. To control the rover, one must anticipate its future. Drivers plan out the rover's maneuvers, foresee each picture it will take in advance, schedule its experiments, and then send up the instructions. Hours later, the team receives the report on how the day went, seeing how the future they programmed manifested in a time now already past. Anticipating obstacles and how to recover from those that were unexpected demands imagining oneself into the rover's body, and mapping oneself into the Martian landscape through 3D displays composed from rover camera images and satellite reconnaissance data. Ethnographer Janet Vertesi has written extensively and compellingly about the ways in which members of the rover teams inhabit these robotic creatures. Writing in 2008 about the Spirit and Opportunity rovers, Vertesi described how drivers plan each of the rover's movements by reconfiguring their own bodies to match the rover's anatomy. Through "intricate associations of talk and gesture," Vertesi writes, a driver "associates her body with the Rover's piece by piece by piece" (2012, 395). Drivers retrain themselves to see the world, for example, through the robot's fisheye lenses, which distort shapes and distances, rather than processing and converting the images to rectangular projections, so as to become "fluent" in the Rover's particular visual world and to work more quickly. Through these physical contortions and mappings, Vertesi explains, the drivers "acquire the robot's own native representations of Mars, as well as its own bodily orientation and apparatus" (397). They "write the Rover onto the human body," Vertesi argues (399). She quotes one of the drivers as claiming, like a mantra, "my body is always the rover" (393). The driver's body must be the rover's future and the rover's past, cycling through the long now that connects the two.

According to Vertesi, operators became strangely, even magically entangled with their off-world machines. Most interesting to her as an ethnographer, Vertesi writes, was the way that drivers "assumed a direct, even causal, somatic association between the robot's experience on Mars and individual bodies" of the drivers on Earth (402). She cites multiple examples of team members experiencing sudden inexplicable injuries or impairments that they soon learned coincided with a rover's malfunction: a frozen right wrist at the same time as Spirit's right front wheel became stuck; a shoulder injury occurring simultaneously with Opportunity's own arm joint issue. While this is an illustration of a remarkable empathic link imagined between humans and robots, it also implies that these human operators, isolated from the dangers of their interplanetary mission by distance and robotic augmentation, imagine their well-being as either affected by the risks to the robots or, conversely, their own embodied conditions put robots in peril. And in the long, amorphous now that stretches between here and Mars it is unclear which event happened first or what might be the directionality of this magical influence.

Filmmaker Minna Långström takes up the mental and physical maneuvers drivers perform to inhabit the mechanical bodies and laggy time of Mars rovers in two related works, a documentary film, *The Other Side of Mars* (2019), and a three-channel multimedia art installation, *Photons of Mars* (2019). They draw upon the same footage and material but present it in very different ways.[8] The documentary, *The Other Side of Mars,* includes first-person narration and talking head interviews with Vertesi, as well as geologist Dawn Sumner, NASA Chief Engineer Rob Manning, and NASA roboticist and rover driver Vandi Verma, who all discuss what it is like to drive and direct a rover. While the documentary is not completely "straight" (for example, it includes some fictional sci-fi elements, such as a steaming hot cup of coffee materialized by a futuristic machine), it aims to evocatively inform viewers of the scientific and engineering feats performed by the rovers and their teams each day, but also captures some of the aesthetic and emotional impulses that affect the choices and operations. For instance, Dr. Sumner describes an image she planned for Curiosity because she thought it would be "inspiring" and affective but did not necessarily have a research justification for its capture. That image, of Curiosity looking back at its own tracks across the sand of "Dingo Gap," a site named after one in Australia where Sumner had done field work, "shows up in more presentations than any other image we have taken in the mission," she explains in *The Other Side of Mars,* "because the camera uplink lead framed it really beautifully, and when people look at that image you feel the absence of humans on Mars." There's something strange in Sumner's description— it is, simultaneously, a manifestation of her meticulously planned choices and full of personal nostalgic resonance and it was a also poignant surprise, and aesthetically moving image created by the robot and its sensors. The scene features dramatic tire tracks cresting over a summit of smooth sand untouched by any being until Curiosity. Sumner states that one "feels the absence of humans" and yet it does so from a situated viewpoint that screams of presence, particularly technologically-aided human presence from the long history of photography. The image bears a record on the ground and in the archive of human action and desire—even if mediated and at a distance— and it does so with artistic and narrative flair. The photograph is a scientific image taken autonomously by a robot, but it is also document that exposes the aesthetic nature of the work these scientists do, and which are constrained by the formal limitations of telepresence as an artistic medium.

Sumner and Curiosity's "Dingo Gap" image shows up a "Top 10" of 2014 essay in the popular contemporary art magazine *Artforum* by science fiction author Kim Stanley Robinson (Robinson 2014) (Fig. 2). The author of the *Mars Trilogy* (1992, 1993, 1996) is just one of the many who have been moved by this particular image. After looking at Viking's images for fifteen years and writing a

8 I am indebted to Lila Lee-Morrison for introducing me to Långström's work.

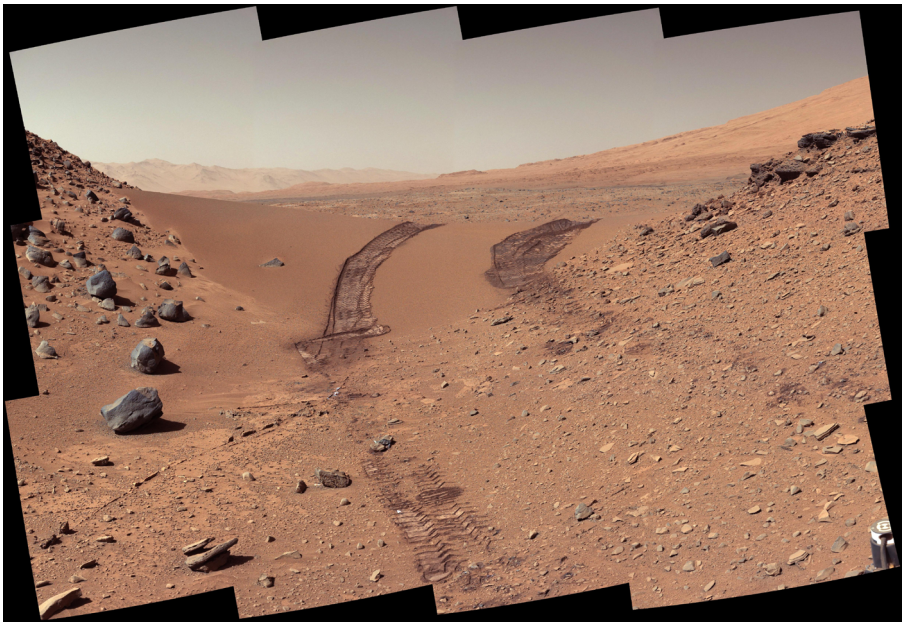

Figure 2. *Curiosity's Color View of Martian Dune After Crossing It* (2014). NASA / JPL-Caltech. Public domain.

series of books that revel in evocatively describing what it will be like to inhabit the landscape on Mars, Robinson was transformed by Curiosity's images.[9] He writes: "I was stunned. It was as though I had been nearsighted and color-blind all my life, and then suddenly could see the Red Planet with full sight. And what a beautiful sight it was: a million different textures and tints and colors articulating the ancient volcanoes, crater rims, and canyons…. Someday Mars will become a human space, and when we do inhabit it, there are going to be a lot of very happy artists there" (2014). *In the Other Side of Mars*, Sumner appears as Robinson's happy artist in advance of any inhabitation. A strange circuit in time and space links her past, earthly experiences to a planned image that returns at a lag of a Martian future. Throughout Långström's documentary, the scientists repeatedly imply that to be present on Mars, to connect the here to there, requires engaging with the aesthetic operations of telepresence.

The Photons of Mars, Långström's experimental take on the same footage, is a different kind of document than *In the Other Side of Mars*. It does not narrate a series of experiences of maneuvering in the weird Martian now but rather evokes a strange temporality through the formal device of a three-screen projection that enables Långström to create curious conditions of simultaneity and

9 I find it astonishing that Robinson wrote these deeply embodied descriptions of Mars before even seeing the 1997 Pathfinder and Sojourner images.

disjunction across the space-time of the screens. Roboticist and rover driver Vandi Verma is the only character from *The Other Side of Mars* that appears in the near seventeen-minute looped presentation. The video opens with Verma picking her way along a wild suburban footpath that leads through the woods, across a creek, and to the edge of JPL's Pasadena campus. She navigates the terrain easily, making her own decisions. The contrast with the difficulty of guiding a rover is implicit in each thoughtless ascent and casual hop across the rocky stream. The viewer sees the scene and Verma's place within it from multiple viewpoints simultaneously. In the opening shots, she is walking into the distance and toward the viewer, receding on the left and approaching on the right. A babbling creek runs through the middle. The vantage of all three cameras suddenly shifts from embedded views to lofty opposing shots of the road to JPL and an establishing shot of the research campus taken from a distance, framed by the San Gabriel mountains. The arrangement of the first sequence, with shot-reverse-shots on left and right screens with B-roll details in the center, quietly falls away and instead the shot and reverse-shot are disjointed in time. One sees Verma walk into the distance toward JPL on the left, but she never appears on the right. In fact, it is unclear where the right-side shot comes from in both time and space. It is not simultaneous and, moreover, it seems to be the same view as on the left, only rotated 180 degrees, as if one is looking at it in a mirror. This mirror does not show a reflection of now; it displays some other moment in time, before or after, the shot with Verma. It is impossible to know.

Photons of Mars hops across sites at JPL—conference rooms, the Mars Yard robot testing area, a 3D driving station—and at each Långström evokes muddled relationships between now and then as well as between here and there. In one sequence, three cameras rest on a conference room table. Metal-clad and fortified, they appear old, as if from the time before plastics and the proliferation of disposable things; but really, they are modern, even futuristic, designed to capture instants and withstand the elements, having long lives in inhospitable circumstances. The scene cuts to a triple view of Mars—a Curiosity "selfie" flanked by two panning images of Marian regolith. The ground drifts vertiginously as the rover holds itself in a steady moment of self-regard. Knowing how drivers work and make choices, this "selfie" marks a human desire for the machine to point one of its cameras at another and to capture its portrait situated in the landscape. Of course, what one sees here is one camera photographing another—the rover's arm camera is looking at the camera situated just off center on the robot's "face." One might imagine the hall of mirrors, the echoing *mise en abyme,* caused by this doubled vision that aligns the robot's with our own.

Throughout the video (Fig. 3), Långström captures but does not explain the temporal relationships between drivers and the rovers. One sequence shows Verma working in the Mars Yard, JPL's proving ground where they use doubles of the rovers to test maneuvers and simulate solutions before sending

commands to Mars. If a rover gets stuck while following the uploaded commands, as Opportunity did in 2011, drivers can test ways of freeing it, seeing what works before risking it in the field. There is a strange temporality in the Mars yard, too, even if the practice seems logical and self-evident. On Earth, engineers test possible futures, send the commands to Mars, and then later receive information on those futures once they are already thoroughly in the past, to move forward and test more futures. Långström shows Verma controlling a rover in the Mars Yard. On the left, Verma's face is framed in the glow of a computer screen; at right, a rover tentatively creeps out from the garage into the Mars Yard. The center frame provides the rover's point of view: a dolly shot of brown soil, sand, and loose rock. The arrangement soon switches: the rover and Verma trade positions, and the center frame shows ground that is clearly from another world—impossibly smooth and untouched. A shot of the rover in the Mars Yard, with its recognizably earthly backdrop, moves in apparent synchrony with the center frame which shows an identical action on Mars. A shovel deploys, scooping and saving a small amount of regolith. The sound of a non-diegetic electric zap bridges a transition to a close-up of Verma's eyes and two views of Mars. Photographic clicks punctuate the hum of mechanical noises and seem to sync with Vanda's blinks. Her body appears to be the rover, as Vertesi observed, and it is easy to imagine Vanda's view stretching through the screen all the way to Mars. This is what our technology allows but not in real time. Långström delivers a fantasy of copresence by illustrating the strange temporal conditions of robotic augmentation and entanglement. In the most curious moment of the video, Curiosity comes upon a remarkable rock: pyramidal-shaped and seemingly alone in a sandy expanse. It is now known as "Jake Matijevic." The occasion of its discovery is a famous one. On the mission's forty-third sol (September 19, 2012), Curiosity's daily drive ended, by chance, in front of this rock. The rover team selected this eccentric object as the target for Curiosity's first use of its contact instruments on a rock (NASA 2024b). The team named the rock after the surface operations chief engineer for the Mars Science Laboratory Project, Jacob Matijevic, who had worked on Curiosity, as well as all the previous Mars rovers, and died just fourteen days after Curiosity landed on Mars. It acts as a tombstone placed on a distant planet millions of years before its namesake was born. In Långström's video it seems to materialize, like that futuristic coffee cup shown earlier in this video and in *The Other Side of Mars*, recomposed of photons sent across time and space. Verma slowly circles and touches the rock, 3D printed from Curiosity's gathered data. "Jake Matijevic" is in the viewer's presence too. It lurks in the installation, ensconced in a vitrine that catches and refracts the reflections of the three video screens. It has moved from Mars to the screen, and then into the viewer's space as if teleported, or an artifact from a future when samples have returned from the Red Planet.

Figure 3. The three-channel film installation *Photons of Mars* by Minna Långström (napafilms, 2019), at Kunstfort bij Vijfhuizen's exhibition *Supre:Organism* curated by Miha Turšič of the Waag Society. Photo credit: Minna Långström. Courtesy of the artist.

5. Meanwhile

In the case studies of artworks and scientific endeavors above, I sketch the strange temporalities that define encounters with Mars data and which, in their limit cases, point to the condition secretly at the heart of telepresent encounters: that "now" is impossible. As Rovelli explains, the present is a concept that ceases to make sense after a certain threshold of distance. Feeling present by inhabiting a distant body or sensor from afar requires one to grow into lag time, to indulge in the inherent slowness of media sent at the speed of light. By doing so one can see clearly the formal structures and specific aesthetic effects of limit telepresence. Interplanetary temporality undermines the logics— and expectations— of immediacy that define discussions of telepresence and most contemporary media. The understanding that things could be happening simultaneously but in far flung places is, by Benedict Anderson's account, a thoroughly modern idea and narrative invention (Anderson [1983] 2006, 25). Drawing on Anderson's work, media theorist John Durham Peters develops the concept of "meanwhile structures," modern and historical narrative techniques that allowed storytellers in various media to "jump horizontally between scenes," alternately representing actions happening at the same time but in

different locations (Peters 2020, 30). "Antique narrative techniques," he writes in "A Cornucopia of Meanwhiles," "were not capable of cross-cutting, as the film-editing technique is called that takes you instantly from one scene to another—near or far—in a parallel time" (Peters 2020, 30). Modern media, such as the telegraph, telephone, and precise, standardized clock time, allowed for new concepts of the instant and to imagine that space had been eradicated and true simultaneity achieved (Peters 2020, 31). In other historical periods, such elisions of space required magical or divine powers, retrospective confirmation, or advance coordination, Peters explains. None quite achieve the simultaneous power of "meanwhile." But, he writes, soon after the emergence of real-time tele-technologies, Einstein, among others, discovered the finite limits of the speed of light. Media that transmit must always "pay a toll to time," even if it is not easily perceptible (Peters 2020, 36).

Our communications with Mars warp and exceed all Peters's categories, historical and modern. The toll paid to the speed of light is impossible to ignore and takes patience and practice to navigate. As Kac pointed out, the rover's slow images are moving as fast as they possibly can and make one rethink the duration of immediacy and the length of an instant. The inherent way long distance telepresent experiences spatialize time and temporalize space put them in a new aesthetic register and complicate the idea of "meanwhile." When an instant stretches to an hour or a day or more, how do we understand "meanwhile," copresence, and simultaneity? Our technological reach may have exceeded our conceptual grasp, or opened up a new phenomenological means of being entangled with others in space and time. Bowen's and Långström's artworks, and the scientific projects that form their basis, imply that to be present on Mars, to connect the here to there, requires engaging with the aesthetic—not just technical—operations of telepresence. It requires being an artist attuned to the specific formal constraints of an experimental medium. Långström's three-screen arrangement makes cross-cutting unnecessary, as they lay out here and there, now, then, and not yet in an array for the viewers' eyes to move between, creating their own cuts across space and time. The inherent long signal lags that arise in the limit case of attempting to be telepresent—through images, robotics, or any other sensory extension—highlights how latency resides within every telepresent encounter, even if one's equipment or consciousness is not sensitive enough to notice it. Thus, the attempts to be telepresent on Mars, whether through controlling rovers from a lab or experiencing a breeze from one hundred and forty thousand miles (and one sol) away, expose how telepresence, assumed to be the sharing of an instant across space, could also be described as an experience of being simultaneously *now* and *then*, not just *here* and *there*. Telepresence is, thus, more properly, an experience of a past that one often mistakes for the "now."

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III Section.
Documents, Perspectives, and New Frontiers

Introduction*

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The final section of this volume is a multidirectional collection of dialogs and essays that aims to show the roots of the *ARTCHAE* project, as well as its linkage with other experiences and research projects between the past, present, and future of telecommunication media. The section is structured in three parts: the first ("Documents") contains an interview and a lecture with response—first-hand documentation related to present and past artistic and curatorial experiences that are crucial for the project; the second ("Perspectives") republishes a key essay and book excerpt; the third ("New Frontiers") presents the inception of a new art-based research that grounds an innovative gendered perspective in the field of media archaeology.

The first contribution is an interview conducted by the *ARTCHAE* team with Italian journalist, art critic, and curator Maria Grazia Mattei. A key figure in the development and dissemination of telematic art, "new media art," and digital culture in the 1980s and 1990s, Mattei is also founder and director of MEET | Digital Culture Center in Milan, where the *Le Radici del Nuovo* archive is located. In the interview, Mattei describes the preserved collection and its rationale, including valuable and unique documentation of the events organized by the curator in those decades. These materials, whose presence emerged with the cataloging and filing work conducted by Maria Teresa Soldani during the

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ARTCHAE project, have been relevant sources to study computer and electronic arts based on networks before the emergence of digital art.

The second contribution is a lecture by Chicago-born composer, performer, saxophonist, sound experimentalist, and mixed-media practitioner Matana Roberts, who addresses the topic of telepresence through sound and musical practices in the recording project *Coin Coin* (2011–). *ARTCHAE* has highlighted the critical role of sound technologies in media and telematic arts, and Roberts' work is exceptional in the contemporary music scene since it involves electronic tools and archival digging for creating multiple temporalities and connecting with invisibilized presences recalled in *Coin Coin*. The lecture is followed by a Q&A with Maurizio Corbella, music and sound studies scholar, and it reflects on concepts such as history, temporality, memory, and presence through the use of different sound and visual media.

The third contribution is the English translation of the essay "Closed Circuit Faces. Archeologie del volto in telepresenza" by Anna Caterina Dalmasso and Barbara Grespi (2022), published in the Italian journal *VCS – Visual Culture Studies*. This article represents the first inquiry into the lines of research later developed in the *ARTCHAE* project. It investigates videoconferencing platforms (e.g., Google Meet, Microsoft Teams, Zoom) through the lens of media archaeology and positions them within the lineage of closed-circuit video art, drawing on works by early video artists such as Vito Acconci, peter campus, Dan Graham, Bruce Nauman, and Elaine Shemilt. The text shows how, far from functioning as a digital mirror, the webcam apparatus—albeit concealed by its interface design—reactivates structural conditions already explored in 1970s video installations: the disjunction between mirror reflection and video feedback, the instability of self-recognition, and the splitting of face and gaze. It ultimately argues that the makeup table, as it has been represented in art history, can be found in the deep time of digital platforms.

The fourth contribution is an excerpt from Lori Emerson's volume *Other Networks: A Radical Technology Sourcebook* (Anthology Editions, 2025). The book represents the culmination of Emerson's ongoing research started in 2016 on so-called "other" networks—alternative and forgotten networks that preceded or existed outside the Internet and that can foster the imagination of more democratic and less corporative networks for the future. This research is also based on the activities and holdings of the Media Archaeology Lab (MAL), which Emerson founded in 2009 and still directs, now in the role of "Founding Director," at the University of Colorado at Boulder.

The fifth and final contribution is an article derived from Wanda Strauven's keynote lecture, presented at the Milanese conference *ARTCHAE #1* on March 14, 2025, where she was invited as the first international keynote speaker. This essay signals the inception of a new research path and political perspective for the author, who in this article presents her next book project about scaffolding

as both an urban phenomenon and a multilayered screen that involves multiple presences and traces. Strauven, a key figure in media archeology, examines scaffolding as a material and conceptual framework charged with feminist implications to rethink the gendered separation between the domestic sphere as the inside and the public sphere as the outside. Both Emerson's and Strauven's essays are symptomatic of an original political sensibility in media archaeology that aims to situate the discipline, highlighting the operations carried out by marginalized people and interrogating the power dynamics inherent in the dominant media landscape, an approach that the *ARTCHAE* research shares as part of its theoretical framework.

Furthermore, the five contributions are all, in their own way, art-based investigations that become *artchaeologies*: Mattei recounts her experience and interest in computer and telematic arts prefiguring networks and the cultural aspects of the transformation entailed in the shift from the electronic to the digital; Roberts speaks about their ongoing research for the mixed-media project *Coin Coin*, largely based on archival work aimed at digging forgotten histories that they rework through both traditional and electronic instrumentation; Dalmasso and Grespi propose and retrace an archaeology of contemporary forms of self-mediation in early video works; Emerson maps experimental uses of pre-Internet networks by artists and marginalized subjectivities, such as women, Black people, Indigenous people, and People of Color; Strauven looks at works such as Maja Bajević's *Women at Work – Under Construction* (1999), showing how scaffolding becomes a form of feminist intervention to tackle the gendered binary between public and private spaces, where the latter is associated with femininity, protection, and invisibility.

By bringing together these perspectives, this final section connects voices that, in different ways, are essential interlocutors for the research path opened by the *ARTCHAE* project. Read together, these contributions trace a shift in media archaeology toward a more political, grounded, and situated practice, aimed at unsettling the field, including marginalized and art-based perspectives in order to recover lost technologies and confront how the dominant ones have been structured by power. Looking at marginalized identities and counter-histories allows us to read the present differently, and to imagine futures where connection and visibility can take other forms.

Telepresence and Telematic Arts in *Le Radici del Nuovo* Archive. Interview with Maria Grazia Mattei*

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Abstract

This chapter contains an interview by the *ARTCHAE* team with Italian journalist, art critic, and curator Maria Grazia Mattei, founder and director of the MEET | Digital Culture Center in Milan, where the *Le Radici del Nuovo* archive is hosted.

Keywords: Telematic Art; Computer Art; Telepresence; The Roots of the New; Archaeology of Networks

Abstract

Questo capitolo contiene un'intervista a cura del gruppo *ARTCHAE* della giornalista, critica d'arte e curatrice italiana Maria Grazia Mattei, fondatrice e direttrice del MEET | Digital Culture Center di Milano, dove è conservato l'archivio *Le Radici del Nuovo*.

Parole chiave: Arte Telematica; Computer Art; Telepresenza; Le Radici del Nuovo; Archeologia delle Reti

BG: *ARTCHAE* has worked on the theme of telepresence, a concept that is now central in the media world. What does this term mean to you? To which aspects of your research and curatorial experience have you connected it?

MGM: Today, the theme of telepresence is relevant because people have understood that being online, being connected, being able to transfer thought in real time and exchange with others is something very important. It is also a possible way of working and collaborating. For me, telepresence has always meant this: the ability to dislocate one's own body without physically moving, but above all, the ability to circulate thought, to put it into dialogue with others and to create situations of exchange, even production and co-production. So telepresence can be understood as a technological issue, and certainly, compared to what I remember from the early days of the so-called "telematic age" in the 1980s, we now have many more possibilities. It has almost become a spontaneous, natural mode of communication, much like using the telephone, with all its visual, performative, and "dramaturgical" aspects of communication. Yet, these tools also allow us to think. When I think about telepresence, I think of all the technological development that was clearly moving in this direction since the late 1960s and 1970s, particularly with already existing tools such as satellites. There was no network yet—at least not one accessible to people—and no web, but those who truly emphasized this potential revolution in interpersonal communication were artists. As creative minds, they understood that telepresence is a special dimension of relationship, co-creation, transmission of thought, and exchange. Thus, I picked up on a tendency that was already evident in the 1970s,

particularly through those laboratories of artists and creatives that had sprung up practically all over the Western world, even in Australia.

BG: In your archive *Le Radici del Nuovo* ("The Roots of the New") you collected indeed many documents related to this dimension of mediality, and they have been extremely valuable for our project. They gave us important opportunities for reflection—through, for example, two-way transmission works of the 1970s and 1980s by Paul Sermon, Sherrie Rabinowitz, and Kit Galloway, or the often-hidden contribution of the Italian scene to telematic art, such as that of the Giovanotti Mondani Meccanici. Moreover, the name you gave to your archive, *Le Radici del Nuovo*, already aligns closely with our media archaeological perspective. Could you tell us about that title and the "archaeological spirit" of your archive"?

MGM: *Le Radici del Nuovo* is a title I gave it later, I didn't name it this way at the beginning. At first, for me, everything that concerned digital culture—all the expressions that came from research, laboratories, and developments in hardware but especially in software, and all the new directions in communication such as telepresence—were fields to explore. I didn't originally set out to create an archive. I followed trajectories, gathered documentation, and received a lot of material because I collaborated with various groups, particularly those working in telematic art. So, it was natural for me to collect documentation. I realized, however, that the process of digital culture, or of the advancement of digital transition in society, was going to be irreversible. I could see a future, a development, an impact on society. I saw the digital not only as a technical issue, but as a vast paradigm of transformation, one with cultural, creative, and economic consequences. And I simply began to study it, like you do at the university, but perhaps more as field research, firsthand and "unmediated." Of course, there was already literature written by people before me, but the scene at the end of the 1970s and especially during the 1980s was so vibrant that there wasn't even time for me to say, "now I stop, then I'll write a book" or "I reflect on this now." My reflection happened in real time. My synapses started to connect, to link ideas, and I began to glimpse a whole scenario. Thus, beginning in the late 1970s, I declared that the world would become digital, that it would have a future, and that I would collect its traces. I was more interested in the future than in the idea of building an archive, more interested in trajectories, scenes, and trends, as we would call them today. As I became more involved in this scene, this became more evident, as did the fact that there were no real boundaries between sectors, there was continuous interexchange and intersection, and you could perceive evolution taking shape. What was the biggest intuition I had? It was to understand the world of computing not as a technological one. That was the real turning point, and I believe it has proven right, because that's the approach we must take even today. Back in the 1980s, outside

the circles of artists, intellectuals, and the curious who worked on these issues, computing was regarded purely as a technical matter. To recognize instead the potential for creative and communicative use in the hands of those who could develop new expressive trajectories meant entering into a cultural relationship with this transformation and understanding that it would eventually involve everyone. I can assure you, in Italy it was seen as something for IT specialists, engineers, technicians, and trade fairs. I remember working at SMAU [Salone Macchine e Attrezzature per l'Ufficio, "the Office Machinery and Equipment Fair"] in the late 1990s and especially early 2000s, when we created the first cultural initiatives there. It was a technology fair that no one initially saw as culturally relevant. We took a space in the old Milan fairgrounds and turned it into exhibitions and events, to show that "technology is taking us in these directions." That's why I've always seen it as a matter of the future—a future you glimpse—and for me, it became a work of discovery, but also of dissemination. I did this through initiatives, events, and opportunities for encounter and dialogue, constantly making this material available. And meanwhile, the archive grew. The importance of this archive lies, on one hand, in having documentation—certainly not exhaustive, but broad enough—to touch on all the various evolutions of how computing and information technology have impacted our lives since the 1960s. From a historical point of view, it documents how this evolution affected different sectors, from cinema, to television, to media, in its relationship also with culture, museums, and the development of the virtual. On the other hand, I isolated a chapter I called "telematic art" or "art of communication"—which is what we're interested in now. Telematic art was, for me, the clearest example of what I meant earlier. Art has always been central to my research—art understood as a mode of inquiry and expression, a way of creating new languages and new communicative possibilities. Not art as a market commodity—the art market has never interested me. What interested me was the impact that certain research practices had on people, the way they influenced society and sensibilities in that direction. I have always placed creativity at the center, a kind of creativity that found ways to express itself through technologies that seemed destined for entirely different purposes, initiating processes that made one intuit what was to come. The kind of art I called telematic art or art of communication was emblematic because, starting from the 1970s, numerous laboratories had formed to experiment with available technologies. In the 1970s, computers were still cumbersome and personal computers had not yet developed, but satellites, radios, and other technologies could be combined in ways that showed you could break into the field of communication in new ways. These were real laboratories—you can see it in photos from the time—what today we might call "fab labs": very technical but also exploratory from a theoretical viewpoint.

BG: Were the Bell Labs in the United States a model for this?

MGM: In a sense, but I am talking of different experiences. The Bell Labs were part of a company, like Boeing or other corporations that, in the early years especially in the 1960s, had access to computers and understood that these machines could also be used to visualize images. The whole push toward computer graphics came from scientific research, from data visualization as we would call it today. These big companies had computers that filled entire walls, and they made them available by creating dedicated teams that included their in-house engineers and invited artists like Vera Molnár and Lillian Schwartz to collaborate on experiments. In the 1960s these people had to write their own software using programming languages, since there was no commercial software at that time. The first languages for data visualization were born then. That was a truly pioneering stage, another great chapter. Rebecca Allen, for example, already in the 1970s began creating the first simulated three-dimensional images, and the 1970s were not exactly the years of 3D imagery. She taught at the New York Institute of Technology's Computer Graphics Laboratory. So, you had clusters of creative researchers breaking boundaries and finding new ones—that's what creativity is. And at the same time, these groups were supported by companies that provided the resources to do this. It was an extraordinary model of research. But there were also spontaneous laboratories, groups that included computer scientists and theorists such as Roy Ascott, who began to experiment with new modes of communicative interaction that went beyond the use of the telephone. The telephone already connected people, but these experiments aimed to involve space, time, and the body. That was the key. Similar laboratories existed in Bristol, Austria, and Australia, and of course in the United States. The Electronic Café was one of the most exemplary cases. These labs connected through different media, including radio, and what did they explore? They explored the possibilities of technological connection, yes, but above all new modes of communication in which *space*, *time*, and *body* became fundamental parameters of their research and experimentation. They created a network among themselves, and through this network began what I used to call "telematic happenings," because they were actual happenings in which participation itself was part of the work. Projects like *Hole in Space* (Galloway and Rabinowitz, 1980) connected New York and Los Angeles through storefront windows, sparking a process of participatory communication made possible by television and satellite. It was still broadcast communication, but it brought to the forefront the concepts of interconnection, interaction, and interactivity, centered on the person as an integral part of the happening, and therefore of the work itself. Why is this theme important? Because telematic art experiments were not just isolated events but became almost a movement, with its own spaces, networks, experts, and a continuous, lively program of activity during those years. What I find most interesting is that these artists fit perfectly into a much broader cultural context, not necessarily a technological one, that

was moving in many directions, including theirs. To explain: the 1960s were years of counter-information. Television was seen as a medium of conformity—broadcasting messages that left viewers hypnotized, absorbing everything uncritically. In response, many artistic movements emerged that sought to rediscover new modes of communication, the centrality of the individual, and the concept, already present then, of the artwork as a collective work rather than the product of a single artist. It broke away from the romantic model of the solitary artist creating alone. There was much more of a collective working scene—think of The Kitchen in New York, a highly experimental environment that went against the normalized structures of official culture at the time. If you don't understand that cultural background, you can't understand why these experiments were happening. That was my intuition, and I saw it as a crucial key for connecting everything that was going on, the computer art movement, telematic art, the rise of virtual art. All these movements, which I studied because I experienced them, belonged to a continuum in art history—or rather, in a kind of art that I find extraordinary: an art closer to society and to people, a sort of social art, because artists were working with the idea of changing society or awakening awareness and personality, a utopia that has also conducted us to the excesses of today's individualism. It was utopian, yes, but not only utopian. Because today we also have the power to express ourselves, to break free from the model of passively sitting in front of a TV and thinking only what it tells you. Telematic art, which represents an original and new chapter in the experimentation with new languages and relationships with technology, also connects to a longer lineage within art history, that of the relationship between art and technology, which has deep roots. That's why the idea of the "roots of the new" is central: by rediscovering these early experiences, we can better understand current processes.

RG: From about the mid-1980s to the mid-1990s, art nourished a utopian vision of technology. It imagined it would have a decisive role in shaping the human relationship with it—as in *Good Morning, Mr. Orwell* (Nam June Paik, 1984) or *Piazza Virtuale* (Van Gogh TV, 1992). Today, where our lives are symbiotic with digital media and that relationship is no longer perceived as utopian, what kinds of imaginaries, operations, or interventions can emerge from the encounter between artists and technology?

MGM: The most anti-utopistic question today is that of big data, but art is still elaborating this creatively, in continuity with early programmed art and kinetic art. Today, when technology has advanced so far—what Jean-Michel Jarre calls "the golden age of artificial intelligences"—there are many creative people experimenting. But only a few truly give us flashes of insight into how we are evolving. If you look in that direction, connecting to a historical flow of thought developed through many cases over the years, you'll see that even today

some artists are able to capture those "weak signals" destined to become stronger, or to offer a representation, perhaps utopian, of what the next present, the future, might look like. I'm thinking of artists—truly great artists—working on the theme of data. In the 1970s, data meant visualization—the simulated display of calculation, the visual representation of certain mathematical or engineering processes. I remember Boeing's computerized image of two pilots in a cockpit—it was striking because it emerged from computation, representing an engineering project. Engineers could read the formulas, but those without that training couldn't, so simulation helped make those processes understandable. Today, those who know how to work with the DNA of our memory, with what we call data and datasets, are using them to extract our past, read and reinterpret it in a contemporary and future-oriented way. They're showing us a powerful evolution toward hybridization between human and machine, where technology is no longer merely an extension of our abilities but also a kind of *facilitator*. Jarre speaks of "augmented imagination", a faculty that lets us see beyond the visible, to make things emerge, to organize thought, and to set knowledge processes in motion that transcend human senses. Another development now unfolding—something that was already discussed in the early twentieth century by the avant-garde—is the multisensoriality of the artwork as a total work. On one level, this is about restoring the completeness of human experience, engaging all senses. Yes, this has to do with entertainment, and the entertainment industry will surely grow, but it also allows us to identify weak signals of powerful cognitive and learning processes. These modes of interaction act powerfully on the neurological level, they affect cognitive learning. Will technology give us greater learning capacity? These technologies can, but only if *people* learn to use them consciously. And who shows us these processes in action? Artists. By looking at their work, we can see where other sectors might go. That's why here at MEET I've placed art, creativity, and people at the center: a creativity based on using and experimenting with technologies that were often born for entirely different purposes. Think of Bruno Munari, who took the copy machine. I involved him in a telematic art experience; it was thrilling because he didn't see the photocopier as a mere machine but as a tool with communicative and linguistic potential. He began creating distortions with it, working on the theme of error and imperfection, even turning it into an aesthetic issue. I brought him to participate in events we organized in Italy and at the Venice Biennale. He was thrilled! He had grasped the enormous potential and enthusiastically collaborated with other creatives around the world, with that free, unbounded gaze that defines creativity—that ability to think outside the box.

MTS: Munari wasn't the only Italian artist with whom you collaborated. Between the 1980s and 1990s, you intensified your collaboration with the Italians interested in experimenting with tools that were new at the time, including the telefax. Could you tell us something about those experiences?

MGM: In the early 1980s, the telefax appeared in Italy. I didn't follow its technological development directly, but I encountered it through contact with the Berlin scene, which was in touch with Robert Adrian X in Austria. He said, "Let's do it here too." This device had just arrived in Italy—the telefax—which until then had been a business tool used in offices and companies, previously transmitting via technologies like slow-scan TV. I discovered that as soon as the telefax arrived, some creatives in Berlin and Robert Adrian X began organizing events exchanging images via telefax. Thinking about it now, it was truly the first "democratic" tool after the telephone, something that entered workplaces everywhere. Almost everyone adopted it at first because it simplified internal communication. The telefax fascinated me because it was an example of a tool designed for a completely different purpose that, when placed in artists' hands, became a kind of proto-web, a means to experiment with new interactive forms of communication, unlike those already being explored through radio or other media. Thus, we seized that opportunity. In 1984, I had the chance to organize *ARTE E NUOVE TECNOLOGIE* ("Art and New Technologies") in Pavia, and I created a laboratory I called "Telefax Art." Later—just as I always do—I looked back and realized there was already an entire movement of art of communication/telematic art with its own theorists. I got in touch with them. Already in Pavia, we connected with Toronto and Sydney, and I invited artists—Munari among the first. That same year, 1984, *Good Morning, Mr. Orwell* came out—though I wasn't directly involved with it—it used not the telefax but video, employing the same tools as television to create a kind of telematic happening across the four corners of the world, with authorial graphics developed by Paik in post-production—these were electronic rather than digital images. But with the telefax, there were many labs and, in Italy, a whole story of experiments. My first work in Pavia was followed by a series of fascinating projects. *Machina* was a major cultural event in Turin, organized with the Teatro Regio of Ivrea and the Castello del Valentino in 1985. At the Castello del Valentino, I invited Giovanotti Mondani Meccanici to use the telefax (*Paesaggi della memoria*, "Landscapes of Memory"), because it had become the "web page" of the event. But it wasn't just a page presenting content—you could interact. The messages, images, and collective, co-creative imagination that arrived through the telefax were then used within a theatrical set. That was its power: a machine like the fax had become a generator of hybridizations and new languages.

RG: Telefax art as a genealogy of the telematics is certainly intriguing, and your further experiences in what will be called net.art proved it. I am particularly interested in the 1986 Venice Biennale, where you worked on *Planetary Network* together with Roy Ascott, Don Foresta, Tom Sherman, Tommaso Trini, Robert Adrian, and Jean René Bader. What kind of idea of network, communication, and "being connected" emerged from that network of artists during those days?

MGM: There were two levels. We were four curators and we revisited the theme of the "planetary network." These were the insights coming from the research of that time—a "system of communication," as Edgar Morin would call it—a planetary nervous system. We called it *Planetary Network* because it consisted of many nodes in a network of communication and creation, emphasizing a strong theme of co-creation, not just communication. So, we created this laboratory at the Corderie, connecting through fax but also through other means, establishing a real-time "planetary network" event. The first level was a productive one: it was perhaps one of the first exhibitions in Italy to use telecommunication and computer technologies to organize the show itself. We used a SHARP server, exchanging messages through plotters that printed meters and meters of paper rolls. There was a server in Canada, and here in Milan we had an antenna in a space provided to us. That initiated an operational, collaborative mode that now seems completely natural to us. We anticipated what would later become a standard way of working—organizing events and staying connected with others. In the 1980s, creating an exhibition was a much slower process: there was the curator, postal correspondence, or at most a phone call—it took a long time. We, instead, saw an entire creative process unfold at great speed. The second level was about sharing a vision: offering a laboratory—more than an exhibition—an open, real-time space that lasted throughout the Biennale, where anyone could connect and experiment. Fittingly, it was an edition dedicated to art, science, and technology. Once again, approaching these themes not from the standpoint of technological novelty but from that of creative processes proved to be a winning choice, because there was truly a freedom of imagination and invention that was extraordinary.

MTS: Speaking of creative processes, in your events you also gave space to Tommaso Tozzi and Strano Network. What role did they play in this landscape?

MGM: Those were project-based experiments, often guided by both theoretical and practical goals. They explored what it meant to be a collective author, what it meant to break spatial and temporal frameworks. They investigated these dimensions, and they did it like computer scientists, theorists, and tinkerers. When I said earlier that today we might call them fab labs, I meant those environments where one worked directly with technology but always followed a shared line of thought, a research trajectory. Someone called them "amateur", but they were not. The results were happenings—creative acts that reflected the aesthetics and sensibility of their time. Of course, there was also a tangible, material production, but the real creative process was communicative: the activation and staging of a practice aimed at exploring certain parameters, communicating in a co-creative, participatory way. It wasn't just about the telephone or voice, but also about sight, images, and above all—space, time, and the body.

MRDP: Ultimately, your archive documents decades of creative processes that have connected arts, culture, and technologies. It is also interesting that many of those documents came from research centers of schools and universities worldwide. So, *Le Radici del Nuovo* today can offer original perspectives to students, professionals, and citizens from which to foster an aware use of digital media, becoming relevant for both research and educational purposes. How are you rethinking educational formats to ensure that "digital culture" is not only about technical literacy but also about critical thinking? Could you explain this perspective, perhaps through an activity organized at MEET? Because it is clear that, for MEET, "digital culture" is not merely about technical literacy—it's a broader kind of education, one that is cultural in nature.

MGM: Honestly, I think of all the activities I organized since the foundation of the center as critical thinking. I'm truly convinced that approaching digital transformation in an innovative way—understanding this process—is first and foremost a matter of cultural awareness, even before it's a technological one. There are already plenty of courses in digital literacy. So, what does MEET do? It offers different kinds of events, contents, and opportunities for exchange. We organize digital events where schools come and students understand what it means to live immersive experiences—grasping the future relevance of this new cultural paradigm of immersivity. Or they come to connect with an artist in the "MEET the Media Guru" program, where artists share their stories and knowledge. For me, all these moments serve the same purpose: to bring people into this world with a different kind of attention and sensitivity, to train sensitivity itself.

LL: How will MEET bring the *Le Radici del Nuovo* archive into dialogue with the programs it offers for young digital artists and designers?

MGM: *Le Radici del Nuovo* exists precisely to help us understand that we must emerge from a kind of daze. The first daze was technological—the "wow" effect of technology. Now that hype has faded, and what we have is a more existential kind of disorientation, a sense of unease: what has happened, what is happening? But you can't understand what's happening if you lack your references—if you haven't absorbed and metabolized the process. I believe you become stronger and more aware once you understand; once you no longer fear it, you can face the present differently. That's my safe harbor. So yes, young artists should know this history. That doesn't mean they'll all take the same direction—no. You absorb, and then you rework it; if you are creative, you can move forward. But it's essential to have that foundation of knowledge. We can do this in collaboration with universities, too—what's needed is an ecosystem.

LL: Is it possible to imagine exhibition formats, within the field of electronic and digital arts, in which conservation and production aspects meet?

MGM: Definitely, and that's what we're looking for here. At MEET we also try to be a bit creative ourselves, even a bit artistic. The first thing I decided was to make them coexist: I don't keep the archive locked away in a small room, the contents are spread throughout the space. First, because MEET was founded on the concept of immersivity—bringing you into the story. You can make that story more three-dimensional, of course, but the models come from observing the works and proposals that have emerged over the years. For example, I created the immersive room for two reasons. One: the main parameter with which we designed MEET as a communicative device was immersivity, both in terms of content and sensory experience. These are the same parameters that artists, in one way or another, have always experimented with, and I wanted to make them tangible here. But that immersive room was also conceived as a space—a "node," as we would have said back then—for telematic happenings. I equipped it with invisible technologies that allow you to carry out live, real-time telematic happenings. To be clear, it's not just a Zoom connection, it's the MEET device itself that becomes a node. And, as I'm discovering, there are still other nodes like this around the world, allowing me to reconnect with the idea of a network—a network of experiential exchange.

MDR: Working on reorganizing *Le Radici del Nuovo* archive has revealed several interesting genealogies of contemporary digital forms, which, despite their differences, can be integrated with works preserved in other archives. Do you think dialogue between these institutions is important? And do you believe it's possible to communicate this shared richness in ways that build bridges between people and institutions committed to the same challenges of preservation and dissemination of knowledge around media and technology?

MGM: Absolutely, yes. In fact, we should be doing much more to inform people in this direction, if we could design even a minimal ecosystem that offered reference points. I always start from a metaphor, that of the compass. You need reference points, but you have to know them and know how to use the instrument. When navigating innovation—looking toward the future, trying to understand what's happening, as I always say, to avoid being passive users of technology—you need that compass. It has certain elements: the needle, the cardinal points—and there are more than just four. There's the university, centers like MEET, the artists—all together helping to reconstruct this territory, which is what I do each time with *ATLAS*. At the same time, when we talk about "networking," beyond the buzzword, it really means finding collaborative ways of working—like what you're doing now: studying something together. Otherwise, there's the risk—especially with archives—that they die, remain silent, or disappear with the person who created them. We could truly start from even a small nucleus, even by simply awakening attention to this theme.

BG: To conclude, our final question can only be: what about the media of the future—what do you see? Is there a work that made you think, "That's the new direction; that's where something is going to happen"? Or are there many?

MGM: The future comes through many signals, there isn't one single work that says it all. You have to look at the great artists who are truly active, those who both think and do—not just those who think without doing. If you want to understand the signals, you must look at those who get their hands dirty in the act of creation—but who also think deeply. When you meet someone like Jarre, your mind opens, and you begin to understand certain things. The same happens with other artists. So, my job is to seek them out, to bring them together, and then a picture emerges. I see traces—not the whole picture, of course, because many things elude us—but, for example, I see an increasingly strong direction toward *real time* development, even in the use of artificial intelligence and tools that allow for real-time, collaborative co-creation. This is not far from what telematic art was aiming for. What those artists envisioned with the technologies of their time can now be realized at an exponential level. And this idea of real time—people think they understand it, but in truth, we still don't grasp its full scope. Just think of its implications in design production: when you start a design process, you hold meetings with this and that collaborator—you can now work internationally, collaboratively, and co-creatively with visualization and communication systems in real time. But it's not about simply connecting people who talk: it's about people who create together, who work simultaneously on elaborating and simulating ideas as they take form. If I've managed to sense something about this world, I owe it to art—to art history, to what I studied in art—and that's what has guided me to focus on certain aspects. If it had only been about technology, it wouldn't have interested me. What I saw in the early 1980s was not technological evolution per se—the arrival of computers in offices and homes, the change in the domestic and work landscape—but the sociological impact of this transformation. That's what fascinated me, that's what I saw as evolution. The fact that the computer, once huge, became small was important, but only to a certain extent. Everyone saw it as a development of tools for science, engineering, simulation—the computer, after all, had its roots in warfare. Therefore, when someone realized that an instrument created for calculation and control could become the "immobile engine"—a kind of God that sets everything in motion—I found that extraordinary. And it was the artists who saw it first.

Resonating Histories. A Lecture with Matana Roberts*

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Abstract

This chapter delves into themes and practices that have structured Matana Roberts' album and mix–media series *Coin Coin* (2011–today) over the years, especially in relation to the topics of history and memory, archiving, composing, and texturing. Starting from exploring *Coin Coin Chapter Three: River Run Thee* (2015) as a key case study, it focusses on: how the project has developed since the beginning and how the artist has approached each chapter; the compositional processes connected to collecting and working with archival materials, as well as to what they define as "panoramic sound quilting"; the practices of writing the visual sheet music conceived as specific medium; the conceptions and use of visual contents for the multimedia performances.

Keywords: Sonic Memory; Archival Practices; Visual Score; African American Genealogy; Multimedia Performance

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Abstract

Il capitolo approfondisce i temi e le pratiche che hanno articolato la serie di album e mix–media *Coin Coin* (2011–) di Matana Roberts, in particolare in relazione ai temi della storia e della memoria, dell'archiviazione, della composizione e della tessitura. A partire dall'esplorazione di *Coin Coin Chapter Three: River Run Thee* (2015) come caso paradigmatico, il capitolo si concentra su: come il progetto si è sviluppato dall'inizio e come l'artista ha affrontato ogni capitolo; i processi compositivi legati alla raccolta e al lavoro con i materiali d'archivio, nonché a ciò che l'artista definisce "panoramic sound quilting"; le pratiche di scrittura degli spartiti visivi concepiti come media specifici; l'ideazione e l'uso dei contenuti visivi per le performance multimediali.

Parole chiave: Memoria sonora; Pratiche d'archivio; Partitura visiva; Genealogia afroamericana; Performance Multimediale

1. An Introduction by Maria Teresa Soldani

This chapter presents the transcription of a lecture by African American artist Matana Roberts, a response by Maurizio Corbella, and a further reply by the artist. Roberts is an internationally celebrated composer, performer, band leader, saxophonist, sound experimentalist, and mixed-media practitioner, working across many contexts and media, including improvisation, music composition, visual art, dance, poetry, and theatre. Their mixed-media artworks have been shown across a variety of solo and group contexts including a major residency and solo exhibition at New York's Whitney Museum, and works shown at Akademie der Künste, daadgalerie and Savvy Contemporary in Berlin, Bergen Kunsthall, and New York's Fridman Gallery.

Resonating Histories was conceived for the conference *ARTCHAE #1: Inside and Outside the Circuit* (University of Milan, March 14, 2025) and explores the topics of history and memory, archiving, composing, and texturing in relation to *Coin Coin* (2011–today), a twelve-chapter multimedia oeuvre conceived by Roberts and published by Montreal's independent label Constellation Records. The project was named after a woman freed from slavery and deals with the diaspora of African descendants in America, as well as the mystical roots and intuitive traditions of American creative expression. Each chapter is composed around specific topics, stories, and genres, and is written by mixing old and new materials that come from different subjects. In particular, *Coin Coin* relies on two key practices activated by Roberts through the arts of recording and performing: digging archives in search of traces and documents, especially photographs, diaries, and any evidence of the hidden history of African American people; and panoramic sound quilting, which is an activity rooted in African descendants' families that here has been transformed in a compositional tool. *Coin Coin Chapter Three: River Run Thee* (2015) will be investigated as a key case study since it was played and recorded by Roberts in solo with a

varied instrumentation and compositional materials, which included the use of electronic equipment, sound samples, quoted songs and texts.

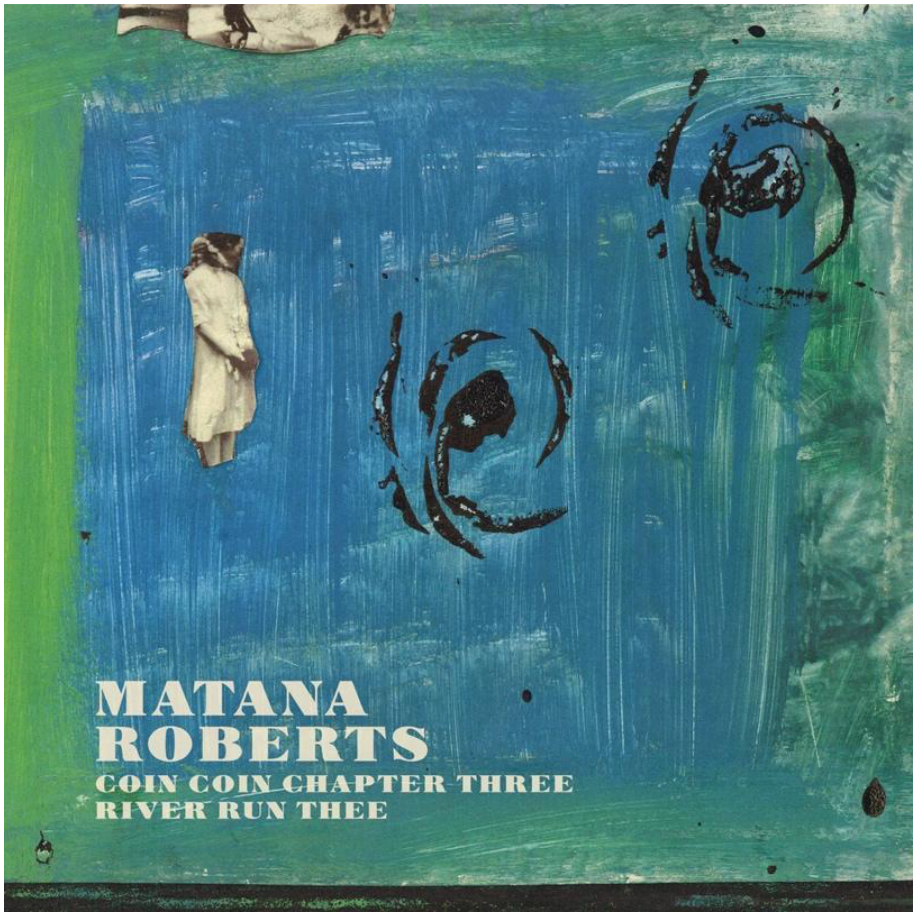

Figure 1. *Coin Coin Chapter Three: River Run Thee* (Matana Roberts, 2015). Imagery from the archives of Matana Roberts. Courtesy of Constellation.

2. A Lecture by Matana Roberts

Hello, thank you so much for having me. My name is Matana Roberts. I am a sound experimentalist, composer and improviser, sound conceptualist. My work lies at the intersection of sound, memory, culture and identity, and specifically American history. And that is something I want to make sure that I put across. Though many people speak of the *Coin Coin* work underneath the area of African American history, I wanted to make sure it is clear that the rubric for the work is about American history, which encompasses not just the African diaspora experience, but also the complexities, cognitive dissonances, and problematic structures of being American, regardless of background, color, or original place of origin. Today I will be discussing mostly the third chapter of my *Coin Coin* project, which is a multi-chapter sonic excavation, part of my own personal lineage as an American ovary person through sound and narrative and historical collage. *Coin Coin Chapter Three* was released in 2015 on Constellation Records—the entire project is published with them, a post-rock Canadian record label that I feel very lucky to be an artist on their roster. *Chapter Three* really represents a pivotal moment in the twelve-part series. It is the only chapter in the series that is a one-person sound work, solo endeavor using my voice, using the saxophone in various setups, sampling, overdubbing, and a great deal of field recordings where I am trying to construct a soundscape I refer to as "panoramic sound quilting." I look at a lot of my work through this idea of the "sound quilt" and I really lean in hard there.

This chapter departs from the ensemble-based storytelling and moves into what I would describe as a "sonic travelogue" or a "fever dream". It documents an imagined and actualized journey not only through the American South, a site of both historical trauma and ancestral inheritance, but it is also based on a book, an old diary called *Dhow Chasing in Zanzibar Waters and on the Eastern Coast of Africa* (1873) written by a gentleman by the name of Captain G. L. Sullivan (1832–1904), who was a part of the abolitionist movement in the United Kingdom. Slavery in the United Kingdom had been deemed illegal much earlier than it had been in the United States and Captain G. L. Sullivan was in charge of a ship that was tasked with intercepting illegal slave ships in the Atlantic, returning their cargo back to Africa, and destroying the ships. So, throughout the work, I am weaving in some of my archival research that I have done around the transatlantic slave trade, but also reading from some segments from Captain Sullivan's book. The title *River Run Thee* partly also references the Mississippi River, an enduring symbol of movement, transformation, and survival in many African American narratives. Here the river really becomes a metaphor for memory, for loss, and for an ongoing struggle towards liberation. While it may sound abstract or nonlinear, this structure is quite intentional, since it reflects what I consider a more honest engagement with fragmented

memory. The work resists the archival impulse to organize history into these neat timelines and, instead, leans into rupture, repetition, and dissonance as methodologies.

My compositional method relies heavily on real-time decision-making on this specific chapter. Here in particular there is a lot of improvisation. But for me improvisation is not merely just a musical form. It is a survival strategy, a social-historical act. I am very fascinated with the word "endurance", or "endure." What does it mean "to endure"? What is "endurance" in history? Panoramic sound quilting is a term I used to describe the layering of sonic fragments, vocal loops, saxophone, and horn loops, spoken text, a kind of morse-code layering of field recordings to try to create a landscape that operates somewhat like a quilt. Pieces may appear unfinished or frayed at the edges, and that is intentional. It reflects the lived experience of people whose stories were never fully recorded. During the creation of the work, I had traveled alone through parts of the American South, collecting sounds, birds songs, footsteps, church bells, the subtle hum of landscapes with long histories. I have also done a great deal of travel through Western Europe, tracing some of my lineage back to a fifteenth/sixteenth–century United Kingdom, and also a touch of France. And there is Austria in there, there is a little bit of Germany. There is some of everything. My bloodline really represents strata of so many different places to create a whole, and that is how I like to think about my compositional practice as well. The sounds are not simply ambient, they are data. They hold frequencies of place, and of trauma, and of presence, and of perseverance.

I would like to talk a little bit about the voice and the narrative structure. The voice in this work is used as a sonic tool, not always as a lyrical conveyor of meaning. Originally, when I recorded the work, there were no lyrical moments, no actual structured lyric moments. I originally was going to release it just as the instrumental. And I decided at the last moment in the studio to look through the archive that I used for the *Coin Coin* work, and I found poetry that I believe my grandfather wrote, and I placed the poetry, I improvised the poetry in studio in real time. There was no rehearsal nor practice. I placed it right on top in real time, improvising with the sounds that I had already laid down, and I very much liked what it turned into, so I kept it. I like to think a lot about meditative fragments. I really appreciated the texture of my grandfather's poetry, how it spoke of a longing and a sort of woefulness that I have also experienced myself during some of my research. For part of this record for a time, I was living on boats in Brooklyn—mostly Brooklyn—not living technically on a river, I was on a bay, but I was using a lot of my experiences from living on those boats to create this work. And much later—though it did not make it on this record—I did take a cargo ship trip from Liverpool, England to Halifax, Nova Scotia, to again get another feeling of what it feels like to endure something, to get a feeling of what does it feel like to cross large bodies of water. The central

character in this piece, which I would call sort of my alter ego that I use often in performance, is an ovary person who wanders through history and geography, listening for traces of themselves. I am informed by my own family history, particularly the ovary people who survived under systems of great systematic oppression. The voice in this is fractured, but it is strong. The voice of this alter ego is not voiceless, but it is the systems that surround them that distort and resist the fullness of the narrative, which is why it is so fragmented.

One of my guiding questions is, you know: what does resistance sound like? In *River Run Thee*, the resistance is nonlinear. It does not present in crescendos or anthems, but in the refusal to resolve. It manifests in sonic rupture and what Fred Moten calls the "break", this generative space of disruption. From the African diasporic aesthetic standpoint, I am interested in the ways that historical trauma lives in sound, how enslaved peoples created coded musical languages, how field hollers and embedded maps into melody, how freedom songs masked instruction with praise. I incorporate codes in all of my chapters as a subtle nod to the legacy of encrypted communication, sonic survival strategies that extend from plantation songs to modern protest music. As artists, we are often asked to interpret history, but if our role is not to translate the archive, I think our role is to complicate it. I see this specific chapter as a kind of speculative historiography and imagined improvised archive made audible. It is rooted in Americanness but aims to resonate beyond its borders, more into diasporic memory, collective grief, and radical hope. I lean on hope so much, even today. As I navigate these personal and collective histories, I really resist closure. I reject resolution. I want listeners to confront the noise and perhaps find themselves within it.

To close, I would like to emphasize that *River Run Thee* is not a traditional narrative. It is instead a sound work that asks to be set with and not solved. It invites active listening, the kind that engages not just the ears but also the spirit. In this work, I am not just composing sound. I am mapping memory. I am listening to ghosts. I am commuting with ghosts. My interest in creating the *Coin Coin* work as a whole had a lot to do with my interest of being in connection with the spirit world, something I have been interested in since I was a very small child. I have had many different experiences with it. I am stitching fragments of the past into the present, not so much to romanticize history, but to really reckon with it. And it is just, it has been a privilege, this entire project, it is turned into almost its own person and it has just been an amazing journey so far. Thank you so much for listening. If you have any questions, just let me know.

Figure 2. *Coin Coin Chapter Three: River Run Thee* (Matana Roberts, 2015). Imagery from the archives of Matana Roberts. Courtesy of Constellation.

3. A Response by Maurizio Corbella

Hi Matana, my name is Maurizio. I am a music and media historian, and I am deeply honored to act as respondent to your very inspiring talk. I have listened closely to all five chapters of your *Coin Coin* project, and particularly to *Chapter Three*, to which your presentation most directly refers.

If you don't mind, I would like to explore the concept of "panoramic sound quilting" and the ways it intersects with various facets of your artistic practice and expressive language.

First, I assume it is intentional that the term quilt evokes fabric—a medium assembled by sewing together disparate pieces of textile. This image suggests a tactile, material sensibility, and a metaphor for your compositional method, as you explained: crafting and stitching together sonic elements in both your recordings and performances. I also wonder whether there is a specifically feminist dimension to the choice of this term, particularly considering that quilting has historically been associated with women's labor, especially within African American communities. In this sense, might quilting become a way of honoring

and channeling ancestral practices—linking the domestic and the artistic, the personal and the political—as you do throughout the *Coin Coin* project?

Second, a quilt is not only a flat, multi-directional surface; it also has thickness and softness, owing to the padding within. I imagine a sonic equivalent in the depth and density of your layering—looped, rerecorded fragments in *Chapter Three*, the interplay of different instrumental ensembles throughout the series, or the integration of mixed media such as video and visual scores in your live performances. With this in mind, how do you perceive the relationship between electronic and acoustic sound in your work? What draws you to the potential of electronic sound, and what types of electronics do you gravitate toward? How do you integrate improvisation with looping, sampling, editing and the other studio-driven techniques you embrace in *Chapter Three*?

Third, a quilt also serves a practical function: it covers, protects, shelters, and provides warmth. Might this function be metaphorically extended to the sonic environments you create? Do your soundscapes aim to offer spaces of healing or solace—a way of processing, through sound, the fractures and traumas of American, and more broadly diasporic, histories?

Finally, I am intrigued by how the idea of quilting extends into your treatment of memory and the archive. In your talk, you referenced the notion of "historical collage" and described your work as an "imagined journey," a "sonic travelogue or fever dream." The river, in particular, emerges as a potent "metaphor for memory, loss, and the struggle for liberation." You powerfully state that your role as an artist "is not to translate the archive, but to complicate it." I find this approach both radical and deeply resonant. Your work invites listeners, regardless of background, into an experience that transcends musical boundaries and engages with history, identity, and imagination in profound ways.

In this sense, panoramic sound quilting is an existential methodology—one that fuses sonic texture, historical depth, emotional resonance, and formal experimentation. Your practice resists simplification or closure; instead, it embraces fragmentation, layering, and multiplicity as a means of honoring complexity.

This may sound like a simple question, but as a music historian I am deeply curious about your personal musical archive—the sounds, recordings, voices, and moments that have shaped your ear over time. How do these influences—whether iconic or obscure, inherited or discovered—reside within your practice and your philosophy of "complicating" the archive? While listening to your work, I find myself drawn to echoes of foundational jazz storytelling—from Charles Mingus's *The Black Saint and the Sinner Lady* (1963) to Max Roach's *We Insist! Freedom Now Suite* (1960), and of course, John Coltrane's *A Love Supreme* (1963). These works feel like spiritual and structural cousins to your own. And yet, I sense that your archive extends far beyond these canonical landmarks. I would love to hear more about the full breadth of your sonic memory—genre-crossing, familial, affective—that you carry with you as you compose, perform, and imagine. Thank you for your precious time.

Figure 3. *Coin Coin Chapter Three: River Run Thee* (Matana Roberts, 2015). Imagery from the archives of Matana Roberts. Courtesy of Constellation.

4. A Reply by Matana Roberts

Hi Maurizio, thank you for asking. So, I use the term "quilt" not to evoke a particular sort of feminist point of view. I am actually not deeply interested in that, I am more interested in this idea of a particular kind of familial history. The way quilting was explained to me in ancestors' stories that I was personally given by family is that the quilting was a family experience. It wasn't just the women and the family who were working on the quilting. The men were also—and this comes from a very Southern American perspective. I know that there is the history of women quilters in the American South, but that is not what I am referencing completely. I am talking a bit about this familial community connection. I also am really fascinated by the quilts of the Underground Railroad, I think that had a little bit to do with it also. Again, I guess it is seen to some as women's work, but to me it is community. The idea of thinking about my great-great-grandparents quilting together and other members of the family taking part in that, I find really fascinating. And so that is the dimension that I am pointing to. I am thinking about community, I am thinking about family, I am thinking about ancestral practices as defiance. And I am thinking about not

so much the domestic to the artistic, but this utilitarian value that sits in many different cultures around artistic objects that also had a different sort of role or status in a home or a community. I am really fascinated by that, and so that is the direction that I was heading in *Chapter Three*.

You are also asking what draws me to electronic and acoustic sounds in my work. I like going back and forth between them. I like the revolutionary potential of electronic sound, its reach and its possibility and its malleability. I like the instant gratification that comes from working with acoustic instruments. So, I go back and forth between them. I like analog synths. I like samplers. I use a lot of different samplers. I like some pedals. I don't like pedals as much as I like objects that can create unusual sound that maybe I am not even thinking about in that moment. It just happens. I also like thinking about analog and digital sound combined with image. And so, I work a lot with moving image and projection within my studio space of also working with sound. Improvisation is a big part of how humans move through the world. And so, I don't mean to pat myself on the back, but I am a pretty good improviser. So, it feels really natural to work with these other tools. I am not a big editor. *Chapter Three* is not heavily edited. I am actually sort of looking for the mistakes and the happenstance things that might feel dis-pleasurable at the time, but then sound really interesting. I use the same sort of collage aesthetic that I use in visual art to deal with sound. I like working with small fragments and piecing them together.

Your third question about quilts covering sheltering, providing warmth. I am not really interested in using the work to offer space or healing or solace. The work to me sits as a testament to the human experience. My mother used to call it "a musical monument to the human experience," and that is what I think I am most interested in. I love these stories regardless of where you come from about human perseverance and the ways in which we persevere and the ways in which that can be celebrated and bring us a lot of joy. So, I am really trying to root around that area in terms of thinking about a history. I am trying to take the history out of the trauma and think more about the possibility that was inherent in choices that people had to make in order to survive something.

And then you ask me about the archive. You are talking about "historical collage" and this idea of a "fever dream"—which is a term that I use often—and "water". Water is a big part of my artistic practice, whether it is dealing with rivers or lakes or oceans or bays. I spent a lot of time in and on water, so that comes in the work in some really interesting ways, allows me to remember a certain sort of somatic experiencing that can happen when engaging with the natural world. And I try to bring that into the work, though I don't talk about it as much. I mean, it sits in the title of *Chapter Three*, for instance, *River Run Thee*. At the time that I recorded that work, I was living on a boat on a bay in Brooklyn, New York, and I was spending a lot of time on the waterways of that city. But I have spent a lot of time on waterways of other places also, and

it informs a great deal of my practice. It is something I am still trying to figure out, but it allows me to think very differently about things. Another water thing I did is I took a cargo ship trip from England to Nova Scotia. There are these cargo ships where they will take on a few extra people. They are not cruise ships, they are just regular cargo ships. And I did that over a twelve-day period, twelve to thirteen days I think it was. Again, to have this somatic experiencing of what it feels like to be in this particular kind of motion. And I try to take those experiences and put them in the work. I feel like those things allow me to keep my imagination open and flowing in a different kind of way. Even though I don't always talk about it, it just is sort of there and it is something that I am still exploring. I am interested very much in textures and sonic textures, but I am deeply interested in abstraction because abstraction allows multiple different types of people, multiple different types of entry into a work. That is one of the most important things to me. That is what the work can really service. Different ways of entering, different ways of exiting, different ways of thinking about a history, even if it is not your direct history, it still sits on this realm of human possibility that everyone experiences in some way or another.

And then your last question here—and sorry if I am rushing through this, I hope this gives you some things to think about—but in your last question asking about the archive. I love archival work. I love work that has deep research. I love work that has a deep archive in which to work with. So, my archive is a series of many things, travelogues and photographs and field recordings and interviews and artwork and fragments and sound work that fragments, and one day I will organize it all in a way that I can really share with people. But I have to finish the *Coin Coin* project first. The *Coin Coin* project has taken way too long to finish. I wish it wasn't that way but what's been so interesting about the project is that has opened other doors for me to explore things in other directions that I would have never thought about. I would have never imagined that some of my work would be displayed in museums and galleries and exhibitions, or that I would be asked to do installation work, or that I would be asked to create work for other people, which I have done. So, it is kind of taken up an interesting space. And the one thing that I have learned about the work is I have to listen to it and spend time with it. And it tells me the directions that it wants to go. It is not really me telling it at this point. The work is definitely its own person and is moving in its own direction. And so, the archive that I dig through for myself in this work really reflects that.

And then you said something else here at the end. You know, it is so nice to see my name next to Mingus or Roach or Coltrane, but I am not really interested in that specificity of genre, and I have had to fight that actually, and I have sort of given up. If people want to think of the music as jazz because of the instrumentation, it is fine, I have bigger fights I need to deal with just trying to survive, as an ovary person of color in the world. And so, it is an honor to see

my name next to those folks, but also I am trying to move beyond this idea of genre, and I hope by the time the project is finished people will have a better understanding of that. I have made a lot of decisions to try to get the work done. It has been harder than I would like it to be. The records are just not, they are not cheap to make, and I don't like being put in a position to have to get people to play them to participate in them if I don't have the right kind of funding. So that is something that I am working on now. I really appreciate your interest in the work and wishing you all the best. Take care.

Closed-Circuit Faces: Archaeologies of the Face in Telepresence*

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Abstract

This article is the translation of an essay published in 2022 in the Italian journal *VCS – Visual Culture Studies*, and it contains the guiding hypothesis of the *ARTCHAE* research project. The authors examine the mediation of faces in videoconferencing apps, investigating the specificity of close-ups on Zoom, Meet, or Teams, to be understood both in relation to the mirror image—long central to processes of self-recognition—and within the genealogy of video, especially early experiments in the live mediation of faces and bodies in the video art of the 1970s. Secondly, this contribution explores the form of gaze conveyed by faces in telepresence, analyzing the non-reciprocity of glances and the constant self-checking distraction to which every participant is subject. In the background lies a broader archaeological question concerning contemporary applications of closed-circuit television (CCTV), across pictorial prefigurations, video art, and everyday media.

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Keywords: Video Conference; Closed-Circuit Television; Mirror; Gaze; Screens; Early Video Art

Abstract

Questo articolo è la traduzione di un saggio pubblicato nel 2022 sulla rivista italiana *VCS – Visual Culture Studies*, e contiene l'ipotesi guida della ricerca *ARTCHAE*. Le autrici studiano la mediazione dei volti sulle app di videoconferenza, ricercando la specificità dei primi piani Zoom, Meet o Teams, da comprendersi sia nel confronto con l'immagine speculare, da sempre cardine dei processi di riconoscimento del Sé, sia all'interno della genealogia del video, in particolare le prime sperimentazioni sulla mediazione live dei nostri volti e corpi nella video arte degli anni Settanta. In secondo luogo, indaga la forma di sguardo di cui i volti in telepresenza sono portatori, studiando la non reciprocità delle occhiate e la continua deviazione autoriflessiva di cui ogni conferenziere è preda. Sullo sfondo una più generale domanda archeologica relativa alle applicazioni contemporanee della televisione a circuito chiuso (CCTV), fra preconizzazioni pittoriche, videoarte e media della quotidianità.

Parole chiave: Videoconferenza; Circuito chiuso; Specchio; Sguardo; Schermi; Early video art

0. Televisageity

The pandemic era was characterized by the disappearance of the face, resulting from social distancing and the widespread use of masks, and, in parallel, by a full access to it through forms of telepresence, particularly via video conferencing platforms, where a domestic, miniaturized version of the cinematic close-up emerged. Over the past few years, much of our social and professional lives have relied on this figure of the human. The close-up was invented by cinema more than a century ago, yet it was immediately understood both as the triumph of the individuated face and as its crisis: a physiognomy of the human and an abstract figure of subjectivity—that white wall/black hole binomial which, according to Deleuze and Guattari, encapsulates the idea of the subject as a depth emerging upon a surface of inscription ([1980] 1987). Webcams that film and livestream our faces via Zoom, Meet, or Teams have instead developed a language of faciality grounded entirely in individuation, in which the recognizability of each subject is the product of a specific mediating gesture rooted in self-surveillance. Interaction on videoconferencing platforms presupposes that each participant curates their own face, generating close-ups that oscillate between the mugshot and the selfie, the faceprint and the self-portrait. Likewise, our access to images of others passes through their self-mediation (Villa 2019), achieved by seeking a reconciliation of face and gaze. In what follows we will examine two aspects of this platform-based visageity: (1) Users' relation to their own teletransmitted face—ceaselessly performed and monitored—within what

may be regarded as a new stage of specular recognition; (2) the collapse of the reciprocity of the gaze, fluctuating between the glance cast toward one's own image and the pursuit of an impossible eye contact with the interlocutor.

1. The Mirror and the Front Camera

In René Magritte's famous painting *La reproduction interdite* ("Not to be Reproduced," 1937), an elegant young man stands before a large mirror mounted on a marble shelf. The framed surface, however, works outside any catoptric logic: it reflects correctly—i.e., reversing right and left—the title on the worn cover of a novel lying on the shelf (*The Narrative of Arthur Gordon Pym of Nantucket* by Edgar Allan Poe), while it does not do the same with the human figure. In the mirror, we continue to see the man from behind, paradoxically reflected —actually, slightly reduced in scale. The painting may be read as depicting a man's entry into the mirror (the book remains on this side, the man passes "over there"), with the reduction in scale of the body within the frame indicating that he has already passed through and that is moving away, but the overall impression is one of duplication and receding: the man portrayed—the English poet Edward James, a patron of Surrealism—has apparently taken a step back (Fig. 1).[1]

This very movement of denied mirroring and apparent receding, in coincidence with the approach toward one's own reflection, is at the center of one of the most celebrated works of video art: Bruce Nauman's *Live-Taped Video Corridor* (1970). Nauman builds a corridor ten meters long and sixty centimeters wide, at the end of which he installs two monitors, one above the other: the first displays a recording of the empty corridor; the second transmits live what is captured by a camera placed at the corridor's entrance, at a height of about three meters (Fig. 2). When the viewers enters the corridor and walk toward the monitors, crossing the camera's field of view, they realize that the closer they move to the screens, the farther they move away from the camera's lens—thus experiencing a double frustration: they find themselves filmed from behind, whereas they expected to see themselves frontally; and they notice that their transmitted image shrinks and recedes, whereas they expected it to approach, enlarge, and become more defined.

1 Furthermore, observing the direction of the lights reinforces this paradoxical movement: the shadow of the body that has crossed the threshold—as well as that of the book—is correctly reflected, that is, corresponding to an inverted light source, while, on the contrary, the reflection on the man's hair continues to descend from a light source located behind the figure.

Figure 1. *La reproduction interdite* (René Magritte, 1937) © René Magritte, by SIAE.

Figure 2. *Live-Taped Video Corridor* (Bruce Nauman, 1970) © Bruce Nauman, by SIAE.

Like much early video art, *Live-Taped Video Corridor* evokes the mirror experience, prompting its viewers to seek on the screen an image analogous to their reflected self. But it immediately frustrates this expectation, exposing the different genesis of the two body images: while a mirror produces an image that depends on the subject's position relative to the reflective surface, video generates an image that is entirely independent of the viewer's position in front of the monitor, varying instead according to the distance between the body and the camera's lens. This crucial difference—experienced in Nauman's work—was perfectly described by Dan Graham, another major figure of that artistic season and a keen theorist of the architectonic nature of video image. For Graham, video "functions semiotically as window and mirror simultaneously, but subverts the effects and functions of both […] as the observer approaches, the mirror opens up a wider and deeper view of the room environment and magnifies the image of the perceiver. By contrast, a video image on a monitor does not shift in perspective with a viewer's shift in position" (1990, 178–79).

Thus, the history of interaction with video images begins in the form of a forbidden reproduction, even if it subsequently unfolds in quite a different direction: the medium's initial resistance to the specular image is progressively overcome by the immersive thrust that characterizes the contemporary image as a whole.[2]

Rosalind Krauss recognized early on that video was becoming the site of a crucial engagement with the experience of confronting the self-image. In her

2 We referred to the framework outlined by the research project *AN-ICON. An Iconology: History, Theory, and practices of Environmental Images* (2019–2025), of which this article was a scientific output.

essay "Video: The Aesthetics of Narcissism" (1976) she writes: "Video's real medium is a psychological situation, the very terms of which are to withdraw attention from an external object—an Other—and invest it in the Self" (57). Krauss may seem to evoke a full experiential conformity between video and mirror, but she is in fact drawn precisely to the works that most visibly "suffer" the specific difference between the two devices and attempt to disguise it.

Consider, for example, Vito Acconci's early experiments, which combine the two images by having him sit in front of a mirror with a camera behind his back—thus showing himself *à la* Magritte while granting us a correct frontal reflection (*Air Time*, 1973). Or his earlier *Centers* (1971), which resolves discontinuities through a gesture of the arm: for twenty minutes, he films himself pointing with the index finger at the center of his video image (he looks into the filming camera lens, but controls the result in a lateral monitor, covering his sideways gaze with his arm). With this configuration, he obtains what Krauss calls a "tautological" image, because it begins at the subject's point of vision and ends in the eyes of his projected double. The outstretched arm covers much of the face but, in exchange, traces an eye-to-eye trajectory that takes the camera lens into account. Acconci thus stages the "self-consideration of the self:" the confrontation with one's own image understood as the direct prolongation of a body that stands out in the real world, and that the fingertip welds to its imaginary double inside the monitor. With this gesture, the Italian American artist becomes a pioneer of immersive art,[3] among the first to push the subject's relation to video toward a fusion that in reality does not belong to the device's technological design (on video and mirror see also Valentini 1998.)

The model proposed by Vito Acconci predominates in the social applications of video, whereas Bruce Nauman's protocol—centered on the differences between mirror reflection and the teletransmission of the self—has been more extensively explored by artists. A tireless experimenter of video's non-specularity was peter campus, trained as a psychologist and author of a series of works that thwart self-recognition on screen. In *Interface* (1972), campus creates a surface of confrontation between users' video image and their natural reflection. The setting is a dark room divided in two by a transparent sheet of glass: on one side stands a camera, on the other a projector. When spectators enter the frame, the reflection and the projection of their bodies appear side by side on the glass, chase one another, and at times overlap (Fig. 3).

3 And he becomes a pioneer of a genealogy of immersivity centered on the myth of Narcissus, that reconstructed by Andrea Pinotti (2025).

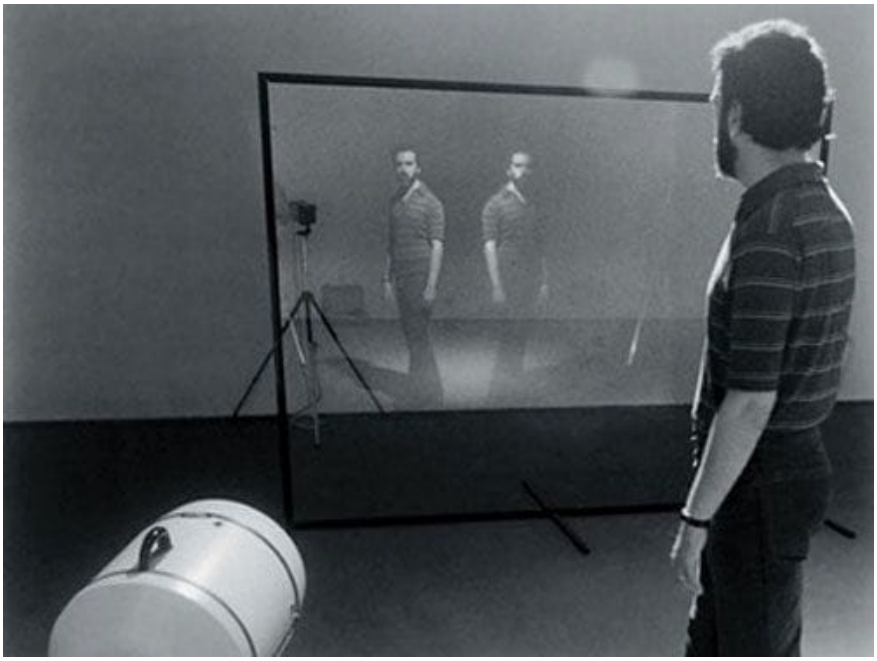

Figure 3. *Interface* (peter campus, 1972). Courtesy of the Artist and Cristin Tierney Gallery, New York.

It becomes evident that the two images are laterally reversed: the reflection presents a reversed double (someone who repeats with the right what we do with the left), whereas the video image presents a "perfect" double, simply displaced in front of us, on the other side of the famous 180° line that governs cinematographic shooting. In which of the two images do we recognize ourselves, then? As a result of counter-lateralization, the mirror reflection is not, on the symbolic plane, exactly our copy; nonetheless, it is the image most familiar to us. The subjective Self corresponds to the face in the mirror—the one we are accustomed to taking as our own and with which, after early childhood, we establish a relation of continuity and adhesion, given that we literally coincide with it. By contrast, the face transmitted via video corresponds to the image of us as it is formed in the other's gaze—here simplified as an interlocutor facing us.

The mirror is not an eye that looks at us; it is a "natural" image based on a physical phenomenon.[4] The videocamera (as with photography and cinema) is, in every respect, the eye of another who takes us as an object. Relative to the mirror image at the base of the Lacanian stage, video (or rather, this form

4 For Umberto Eco (1985, 9-37), mirror reflection is *an absolute icon* that lies at the boundaries of semiosis.

of video art) would therefore represent a further step in self-recognition:[5] the access to our image not only objectified by a self-as-other, but also caught by a gaze that originates elsewhere, from any point in space so long as it is not ours. This self-image is as accurate in theory as it is unsettling in practice, because to grasp it we must use imagination rather than bodily sense—for example, by imagining that we have turned around in order to return our own gaze.

For this reason, familiarity with our face in the mirror underlies various psychological experiments on identity and self-representation, in which recognition is constructed precisely through the manipulation of the monitor to produce forms of specularity. The underlying assumption is that the mental representation each person forms of their own face is the product of mirror experience and continually seeks confirmation there, plastically modeling and updating itself with each exposure to it.

Mirroring is not a merely optical but also a multisensory experience—for instance, strongly anchored in the perception of movement as synchronous spatially contiguous, even if, symbolically, it is counter-lateralized. Recent experiments aimed at isolating the factors most relevant to self-face recognition demonstrate this so clearly that they posit the possibility of *enfacement*, i.e. recognizing oneself in a face that is not one's own. In these tests, the subject is placed before a monitor on which a close-up appears, proportionate in size and position to their own face; it may belong to someone whose features are very different, even of different ethnicity or gender. The subject then receives a tactile stimulus (for example, the stroke of a brush on the cheek) while, in perfect synchrony, the filmed face is "touched" in the same way, with the same tool and on the same side (thus, in fact, on the opposite cheek). Repetition of the stimulus creates the subjective illusion of looking at oneself in a mirror, so that the test subject ends up taking the face on video as their own, even though it does not resemble them at all (Tajadura-Jiménez et al. 2012).

The fact that the reproductive capacity of the video, perfect as it may be, is less decisive for recognition processes than the "mirror device"—with its simultaneity and lateral contiguity—has shaped the recent development of major digital technologies, not only immersive apparatuses but also the most direct everyday applications of closed-circuit television. CCTV (closed-circuit television) works by producing audiovisual information that is simultaneously transported to and transmitted on a monitor, in close coincidence of input and output (Kacunko 2004). For Gene Youngblood, one of the earliest advocates of the medium's artistic potential, closed-circuit installations are "teledynamic environments" (1970)—i.e., spaces continually reconfigured by the shifting

5 It goes even further than cinema, which Christian Metz ([1977] 1982, 45-49) sees as a mirror capable of reflecting everything except the all-perceptive viewer. For the difference between video and film see the pioneering writings by Sandra Lischi (among the most recent 2001, 2019).

faces and moving bodies that inhabit them through the screen. We are accustomed to this type of environment: we experience it daily on our phones and, for some time now, with equally regular frequency, through videoconferencing platforms. The smartphone's front camera and the webcam on our computer create closed circuits within which we routinely inscribe ourselves.

The closed circuit of meeting apps such as Zoom, Meet, or Teams has its own specificities. It is typically a peer-to-peer system built on a cloud infrastructure—i.e., on sending each signal to a server that routes it to every node. Remote interaction is therefore grounded in the socialization of individual self-transmissions, whose dialogic exchange can be seen as the most successful attempt at interactive television.

In this medium, the close-ups we produce and constantly monitor for communicative purposes are subjected to a visual logic that is, all in all, perverse: the webcam transmits our face to others as an ordinary camera does, preserving lateral orientation, but at the same time transmits it to us in mirrored form (Zinneman 2020). No matter how much effort we invest in self-representation by using the webcam as a mirror, the face we ultimately "release" will never match the one our interlocutors see. By contrast, in a historical video installation such as Les Levine's *Iris* (1968), the effort involved in self-producing the face did succeed. A device comprising six television monitors and three video cameras filmed the surrounding space through different lenses, incorporating the spectator's image into the resulting image. As Youngblood (1979) explains, viewers were surprised by their appearance and hurried to correct it—adjusting hair, jacket, or glasses—learning to control and model their public image live, that is, the way they would look if they were on television. On meeting apps, by contrast, we can verify how we look to others only through accidental screen shares of someone else's view.

We must settle for recognizing ourselves in a pseudo-specular digital reflection that is less alienating than that of video and yet very far from the total fusion created by the mirror. Lateralization, after all, is not the only factor differentiating video and mirror, as we have learned from the practice of the selfie.

The selfie represents our everyday operation within a closed circuit. Its strongly gestural character—forming an extension of our outstretched arm (Frosh 2015)—links it to the self-image Acconci produced with the pointing finger and the arm that connected screen, face, and gaze. Indeed, everything that precedes our post-photographic self-shots is homologous to *Centers*: a precondition for selfies is the live transmission of one's face on the smartphone, within the closed circuit formed by the display and the front camera, which has long been fixed in mirror mode and not open to user modification. Until a few years ago, at the moment of capture, the image was "straightened up" to produce a "true" photograph, one conforming to our public self and ready for social circulation. With the introduction of the mirroring option, however,

it has become possible to freeze the video-reflection as such, allowing us to circulate an image closer to our point of view shot in the act of looking into a mirror. Yet this image does not truly coincide with specular reflection as neither this selfie variant nor the mere front camera feed are identical to this. The front camera allows us to control our image—it is the application to the self of the massive socio-technical system of space surveillance based on video feedback and derived from CCTV (whose media logic is explained in Doyle et al. 2012)—but it never allows us to look ourselves in the eyes and lose ourselves in our image, like Narcissus before his double. The front camera remains an eye that watches us watching ourselves: it cannot assume our own gaze upon ourselves because it is not located at the center of the screen, where our eyes fall, but on the border, on the frame. Thus, when we look at ourselves, the camera's capture trajectory cannot coincide with our gaze (and vice versa: if we look into the lens, we cannot simultaneously mirror ourselves).

For this reason, it is possible to shoot an entire film through the smartphone's front camera, as in *Selfie* (Agostino Ferrente, 2019), where the director uses only images produced by the adolescent protagonists acting in selfie mode, framing themselves with their lifeworld in the background—the neighborhood, bars, homes. Yet because the trajectory of their gaze is undecipherable, these videos oscillate between inverted subjectivity (a look from their point of view onto the world behind them) and false mirroring: precisely when they are looking at themselves, their gaze escapes us—indeed, it escapes itself. *Selfie* thus reveals the medium's specific gaze: a device belonging to digital natives, with the capacity to see them looking at themselves as faces integrated into an environment that defines and conditions them (see Montani 2020, 36-37).

On videoconferencing platforms something even more complex occurs. Remote interactions rely on the exchange of self-representations and on the accumulation of autonomous "directorial" gestures through which one's face is both self-monitored in mirror mode and transmitted in video mode. The eye-screen device that today is our laptop constitutes a complex machine of *televisageity* in which, as we shall see in the following section, the gaze fully separates from the face.

2. Are You Talking to Me?

Let us continue the archaeological exploration of these closed-circuit faces by focusing on the peculiar topology of gazes that characterises contemporary telepresence. In videoconferencing platforms the experience of a separation between face and gaze generally occurs unconsciously. At first glance, my face, as seen in the video preview of meeting apps is akin to the reflection I meet in the mirror. During video calls, we constantly intercept our own image, much like when we monitor our appearance in the reflection of a shop window—another

optical apparatus of mediation. An entire category of memes that emerged during pandemic-era smart working epitomises the enchanted expression with which we unwittingly find ourselves staring at the video preview tile.[6] There is something hypnotic about this image which, on closer inspection, is not simply a matter of vanity: in the video preview we expect to find our own face, and yet we do not recognize ourselves.

The video proves to be a pseudo-reflection: at the very moment we try to catch a glimpse of ourselves on screen, the encounter with that face is thwarted, and we are already looking elsewhere. Art history has already foregrounded similar *mises en abyme* of reflection. For instance, Titian's (1555), Rubens's (1613–1614), and Velázquez's (1644) Venuses at the mirror famously depict the goddess in the act of admiring herself. The iconographic motif of the *toilette*, with its ambiguous connotation of *vanitas* and allegory of feminine beauty, can be traced back to antiquity, as evidenced by the mosaic of Aphrodite's *toilette* (third century AD) preserved at the As-Suwayda Museum in Syria. Nor is it limited to mythological subjects: in the famous cycle of Flemish tapestries *The Lady and the Unicorn*, devoted to the emblems of the five senses, the panel symbolising sight depicts the unicorn contemplating itself in a mirror held by the lady (Fig. 4).

At least, this is how these works are usually described. In fact, even without a knowledge of geometric optics and the physical laws of reflection, our everyday familiarity with mirrors should tell us that Venus or the unicorn, occupying a vantage point different from ours, could not simultaneously be visible to themselves on the reflective surface. In fact, they could not observe their own face from the same angle from which it appears on the canvas. In the painting, Venus is not directing her gaze toward herself, but toward the position of the painter in the act of painting—and therefore toward the painting's viewer.

Why, then, even while we know how reflective surfaces behave, do we misinterpret the image? This is a perceptual illusion that, taking precisely this pictorial subject as its cue, is called the "Venus effect" (Bertamini et al. 2003; Bertamini and Latto 2017): when an image shows an individual and a mirror, we tend to believe that the individual positioned in front of the reflective surface is seeing their own reflection in the mirror, even when—on further examination—their spatial placement makes such reflection impossible. The illusion is not limited to our perception of paintings: photographic and cinematographic staging of reflective surfaces has long exploited this confusion in order to hide the apparatus of recording.

Something similar happens in closed-circuit installations that hinge on the discontinuity between video and mirror. In peter campus's *Dor* (1975) (Fig. 5), the artist places a camera facing the threshold of a doorway that provides access

6 Whose caption reads, for instance: "Me looking at myself during a Zoom call, not hearing a word everyone is saying."

to a room; the output image is projected on the wall immediately beside the door. When the camera frames the face of the person entering the installation, their video image is therefore not visible from the same viewpoint, that remains one step before the door threshold. The subject thus ends up chasing their transmitted image in vain, perceiving it only in passing and always, inexorably, from behind. If, however, we observe other visitors' experiencing the installation, we too become subject to a perceptual illusion: seeing the projected face and the individual's back facing the camera, we tend to assume that they too have access to the output, whereas their perspective is misaligned and the closed circuit in fact produces an impossible mirroring.

Figure 4. "Sight," from the tapestry cycle *The Lady and the Unicorn*, 1484–1500.

Figure 5. *Dor* (peter campus, 1975). Courtesy of the Artists and Cristin Tierney Gallery, New York.

The Venus effect, moreover, does not only influence our understanding of images; it also influences how we interpret people's reflections in mirrors in everyday perception. In some cases the effect persists even after the illusion has been revealed. It is not simply a naïve reading: even museum captions betray their susceptibility to this misreading. According to the psychologists who described the illusion, we are influenced by seeing, in the mirror, the reflection of the subject before it; we then assume—erroneously—that the subject also sees the very image we see from our viewpoint. This tendency arises from an egocentric preconception: we think that everyone has access to the same information we receive from our own point of view, whereas to share the same visual field we would have to occupy a similar viewpoint. In other words, we imagine that we can occupy multiple points of view at once—the magic of painting.

In a similar way, on Zoom, Teams, or Meet we are "at the mirror," yet the act of mirroring does not occur properly, because we cannot simultaneously face the apparatus of capture and look at our "reflected" image. Thus, just as while looking at the paintings of Venus we assume she is admiring herself in the mirror, in our self-perception within meeting app interfaces we believe we

are mirroring ourselves in the "selfie" of our preview tile, while we are in fact witnessing a *mise en abyme* of mirroring, without ever being able to meet our own gaze. In these closed-circuit faces we are condemned to watch a vision that our filmed face directs elsewhere, and thus to witness the performance of a face-eye that does not produce gaze.

If in Magritte's painting, mentioned above, the mirror displays the production of a gaze function even in the absence of a face, while in the Venus effect of the preview tile we find instead a face "at the mirror" that cannot meet its own gaze because that gaze is constantly diverted. We expect video to behave like a mirror, returning a reflection adherent to reality, whereas our existences among screens, as Giovanna Borradori suggests, "are governed by a sort of Venus effect" (2016, 247).

That same misalignment shapes our encounter with the other faces that appear on screen. In the topology of gazes produced by the interface we do not meet the gaze of those with whom we are connected; we are limited to staring at their video image, and we cannot decipher where their gaze is directed—generally engaged in a scan among layered windows and applications. Sometimes, in a clumsy attempt to appear more expressive, we try to intercept the gaze of those other faces: diverting our eyes away from the images and staring the webcam's objective in an attempt to produce a television-style look. But soon, deprived of the sight of others' faces, we are drawn back to the grid; our eyes scan the split-screen image, following the lines of force imposed by the interface, in order to recover the spectacle of a faciality now deprived of its decisive function of fixation: an act of seeing that does not produce a gaze.

If we reverse the terms, we might imagine a different articulation of the split between eye and gaze described by Jacques Lacan, and before him by Roger Caillois, as though the scission were inverted: this is not a gaze produced even in the absence of an eye as a biological organ, but a form of looking detached from its capacity for fixation—a face that has lost the catalytic, hypnotic function of the gaze.

In meeting apps the image of our face thus becomes a mask for our gaze. In extending our visual capacity and our visibility, telepresence simultaneously generates the need for masking: the need to obstruct the lens, just as the pointing finger of Acconci in *Centers* seems about to do. The environment generated by video's regime of visibility demands that we develop the ability to dissimulate the surface of our body—to learn *how not to be seen*, to borrow Hito Steyerl's expression.[7] This dialectic between showing and hiding pertains to the intrinsically ambiguous structure of the screen, which here recovers its etymological function as shield and protection investigated in genealogies of the screen (Elsaesser and Hagener 2010; Buckley et al. 2019; Bodini et al. 2020; Strauven 2021) and re-emerging

7 H. Steyerl, *How not to be seen. A fucking didactic educational .MOV file* (2013).

forcefully in pandemic and post-pandemic contexts (Carbone and Lingua 2023; Casetti 2023). Of this ambiguous nature we may be more or less aware: we can be Narcissi who are aware or unaware of the opaque presence of mediation, as Andrea Pinotti notes by alluding to the myth's double articulation (2025, 17–42).

Before becoming the surface of a transparent exhibition of the image, the screen is camouflage, an interstitial barrier, a membrane, a filter. This prophylactic function tied to screen-mediated communication was prefigured by David Foster Wallace in a section of *Infinite Jest* (1996), which offers a striking phenomenology *ante litteram* of videoconferencing platforms. In the novel's futuristic universe, the advent of videocalling, after an initial moment of euphoria, ends in failure. For the narrator, the causes lie in the emotional stress produced by visual telephone interfaces. By reducing the speaker's body to immobility and forcing an appearance of total dedication to the interlocutor, "videophony" subverts the regime of distraction characteristic of interpersonal communication, which permitted a "bilateral illusion of unilateral attention." A second psychosocial phenomenon, however, undermines the new technology more radically: symptomatic consequences tied to users' negative self-perception of their own image—what the narrator calls a form of "video-physiognomic dysphoria." Seeing their own image in the output signal, video callers recoil in horror, unable to recognize themselves. In response, the market begins to produce high-definition masks designed to improve users' appearance: at first electronically generated—an archaeology of augmented-reality filters or virtual avatars—and then, more cheaply, as wearable sheaths; these are soon replaced by transmissible photographs, sort of proto-profile pictures, that can reflect the desired self most effectively. Such images can be placed in front of the camera to block the field of view completely and are eventually replaced by standard lens covers. The decline of videophony finally allows users to regain their lost invisibility—exactly as we have learned to do in our own practice of remote video communication, by exercising the option of turning off the built-in webcam.

As we settle in front of our laptops we arrange ourselves like Venus in her *toilette* (Fig. 6): our faces pose like models before the mirror, yet without being able to see themselves—hidden by the veil that is the screen, as an extension of the *toile*, that is the "cloth," from which the dressing table takes its name, namely the embroidered or ruffled trimming arranged around the piece of furniture, where ointments, perfumes, makeup, brushes, and other boudoir objects were traditionally displayed (see Koda and Bolton 2006). On closer inspection, it is precisely in this piece of furniture that we can discern an archaeology of the personal computer setting as a tool for remote communication.

Indeed, if clothing and female makeup, with the consolidation of the bourgeois value system, are relegated to the reserved space of the bedroom, the dressing table, as it takes shape in the aristocratic lifestyle of the seventeenth and eighteenth centuries, constitutes a peculiar intersection between intimacy

and the social dimension. As evidences by the ceremony of the royal *levée*, the lady's morning *toilette* merges private ritual with public performance—an occasion not only to receive friends and courtiers and keep abreast of the latest news and gossip, but also to conclude business and economic decisions. In the *toilette*, the display of the female body thus becomes the site of a spectacularization of domestic space akin to that generated by contemporary telepresence.

Figure 6. *Venus at a Mirror* (Peter Paul Rubens, 1614).

Figure 7. *La casa telematica*, toeletta, Fiera di Milano (Ugo La Pietra, 1983). Courtesy Archivio Ugo La Pietra.

The convergence between the dressing-table setting and the topology of telepresence did not escape the attention of the artists who pioneered experimental work in video. The para-specular structure of the closed-circuit installation and the motif of Venus at the mirror overlap, for example, in one of the environments of Ugo La Pietra's project *La casa telematica* (1972), which explores the interpenetration of electronic technology and domestic space, prefiguring contemporary smart homes. In the installation presented in 1983 at the Milan Fair, the dressing-table area reinterprets the dressing table—a status symbol of post-war bourgeois interior design—by extending it by means of a closed-circuit camera system. The archival photograph of the environment (itself exploiting the Venus effect to conceal the photographic apparatus from the shooting) shows the reflected image of a performer as she combs her hair. Three monitors counterpoint this reflection by capturing perspectives of her face not accessible through the frontal vision of the mirror. The juxtaposed montage of screens thus spatializes the body image, recomposing its three-dimensionality. The real-time circuit produces a deferral not of duration but of the surface of space occupied by the body: in the telematic *toilette* I observe my face in the mirror and

at the same time I access it from perspectives (output of cameras placed at the sides and behind me) that I could not obtain simultaneously.

The convergence between video's proxemics and the function of the mirror seems to confirm Krauss's intuition. However, the video does not merely re-enact the mirror's narcissistic function. Indeed, the narcissism that for Krauss is endemic to video is not to be understood only in a psychoanalytic sense, but also in light of the "second and more profound sense of narcissism" (Merleau-Ponty [1964] 1968, 139) that, for Merleau-Ponty, marks our relation to the visible in general. If the mirror is the first technique through which the body experiences its exposure to gazes—discovering itself not only as seeing but as reciprocally visible—video, by exposing profiles that I cannot see from my own viewpoint, shows that my body is not only visible but three-dimensionally and environmentally inserted into the visible—indeed, it is *of it* (Merleau-Ponty [1964] 1968). As Lacan puts it: "I see only from one point, but in my existence I am looked at from all sides" ([1973] 1998, 72). Thus, bringing video's gaze into circuit makes it evident that the reciprocity or reversibility of vision is always imminent and never realized in fact: I cannot simultaneously witness myself as perceiving *and* as perceived. Video installations engage with this truism by technically extending the reflexivity already inherent in our embodied condition, our way of being a body, therefore staging the slippage of gazes that re-emerges in the closed-circuit faces of digital platforms.

The face that appears on video is not myself but a me-as-other, my *Doppelgänger*, an uncanny alter ego. *Doppelgänger* (1979) is also the title of a video performance by Elaine Shemilt, part of a series of experimentations begun in 1974 and later eventually lost as they served as supports for ephemeral installations[8]. In the framework of feminist avant-gardes of the 1970s, Shemilt uses video as a performative element to manipulate her own bodily image and generate real-time perceptual deformations. In *Doppelgänger*, after an extreme frontal close-up, we see the artist sit before a mirror. On screen we can observe in a medium shot both her reflected image in the mirror and her profile from a three-quarter angle, standing in front of it. Looking at herself in the mirror, Shemilt proceeds to apply a thick, pale foundation to her face. Once finished, she takes a makeup pencil and begins applying makeup not on her face but directly on the mirror's surface, tracing the outline of her face, reduced to the white *tabula rasa* of a theatrical mask. The drawing of the face on the mirror surface overlays her reflected face, tracing eyebrows, eyes, mouth, nose, and so on: the phantasmatic alter ego to which the performance's title refers.[9] When the drawing is complete, the artist leaves the scene, moving away from

8 A restored version of the videotape is accessible at: https://vimeo.com/115278830.

9 The voice-over evokes the theme of a double personality by relaying medical notes on schizophrenia. The entire video is punctuated, at several points, by cutaways to photographs featuring multiple exposures of the artist's face, suggesting the idea of a multiple identity and a lack of correspondence between her public image and her inner self. Cf. Leuzzi (2016, 2019), Leuzzi et al. (2019).

the mirror: only the "double" produced during the performance remains, as if the copy had replaced the original.

If in the history of painting artists have always used mirrors to represent themselves, Shemilt similarly uses video to realise a self-portrait in the mirror (Fig. 8-9)—while the mirror itself takes the place of the pictorial canvas. Yet the viewer of the video performance quickly discovers themselves a victim of the Venus effect. In order to trace the facial lines on the reflective surface while following the outline of her own face, the artist does not look "into" the mirror: visibly her eyes do not point toward her reflection. Where is her gaze directed? Toward the closed-circuit video preview, which remains off-screen for the beholder watching the recording, and is only visible from the performer's position[10]. In other words, in the video performance we observe an anamorphosis: the face traced on the surface of the mirror appears as such only from the camera's (and the spectator's) point of view, while the artist, from where she sits, cannot perceive the same correspondence (except as she looks at the closed-circuit video feed visible only to her).

Figure 8–9. *Doppelgänger* (Elaine Shemilt, 1979). Courtesy of the Artist & REWIND Artists' Video (DJCAD, University of Dundee).

As long as the two images—pictorial and specular—overlap, the mirror surface functions, in its opacity, as a barrier preventing the artist from acting on that other version of herself that appears on video "beyond the mirror": we, spectators, can see it, but for her it is accessible only obliquely, that is, only by diverting her gaze away from the mirror and to the video.[11] The performer's gaze

10 In 2016, Shemilt produced a re-enactment of the video performance, curated by Laura Leuzzi and and Adam Lockhart at the Nunnery Gallery, Bow Arts, London. *Performance documentation accessible here: Doppelgänger Redux*: https://vimeo.com/190696369.

11 This diplopia reverberates in the dissonance between the dressing-table setting—defined by the act of applying makeup as a social marker of femininity—and the artist's outfit: a white T-shirt and overalls, fashionable in the 1970s and 1980s, which evokes the world of manual and industrial labour, in contrast with the stereotype of feminine display.

is directed toward the mirror and yet oriented toward an invisible elsewhere, elusive and inaccessible. Indeed, this topology seem to replicate precisely the misalignment of gazes that constitutes our experience of videoconferencing and the conditions of production of selfies. The difference lies in the fact that, in meeting apps or in the preview tile of our smartphones, the distance between camera and screen has collapsed, reducing the divergence of trajectories to a minimum, narrowing of the gap between screen and mirror as if they were foregrounded by the same logic.

3. Virtual Closed-Circuit Faces

The closed-circuit video installations of the 1970s belong to a broader genealogy of contemporary media, and especially of today's video conferencing platforms. As early artistic experiments centered on the teletransmitted face, these works already brought to light the issues bound up with our transformation into a living image—an image that both corresponds to us and stands in for us. Some historical installations force video to become mirror (through a combination of reflective surfaces and camera positioning); others exalt its specificity as a filming eye capable of inserting the subject into the pure field of the visible (by denying specularity or intensifying the diversion of gaze). The application of closed circuit to everyday technologies—first the smartphone, then telepresence apps—has pushed in the direction of mirroring the self in the transmitted signal (through mirroring options or the inversion of the webcam), and produced faces that possess the inverted lateralization of the specular reflection but not the capacity for eye-to-eye gaze. This last divergence between video and mirror may be addressed by the imminent introduction of avatars that will replace our filmed faces. The avatar (the image that remains on the mirror, our *Doppelgänger*) will ideally be able to simulate ocular contact with interlocutors, although with modalities still to be defined. In some experimental apps avatars will be in augmented reality with a significant video component and in Horizon Workrooms, a mixed-reality environment launched by Facebook precisely as an evolution of webcam videoconferencing, VR headsets are used to enter "rooms" and interact remotely. The transmission of our movements—making the real self coincide with the virtual one—will be the only survival of the mirror device: head and arm gestures will be tracked (still on the basis of a sensor that films us, as in video-based devices), but at the same time our virtual faces will be endowed with gaze. Avatarization is in fact the only way to place a virtual webcam "behind" our eyes, restoring an immersive form otherwise thwarted by the fusion of monitor and camera. In this way, the least "fusional" of contemporary media, still conceived as a mosaic of framed flat images, concomitant and co-present—will also move in the direction of immersivity.

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An Excerpt from *Other Networks: A Radical Technology Sourcebook* (Anthology Editions, 2025)*

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Abstract

This essay is an excerpt from *Other Networks: A Radical Technology Sourcebook* by Lori Emerson, which includes the Introduction to the volume and the chapter devoted to imaginary media. *Other Networks* begins from the premise that the internet as we know it is not a foregone conclusion: the corporatized, surveilled, and monolithic state of today's networked communications represents only one among many possible configurations. Through a taxonomy of communication systems that preexist or exist outside the internet, Emerson uncovers the promise of hidden alternatives. The excerpt includes the book's introduction and a selection of networks from this taxonomy. Its inclusion in this volume highlights *Other Networks* as one of the leading contributions to a new, politically engaged orientation in media archaeology—an approach that resonates closely with the aims and research trajectory of the *ARTCHAE* project.

Keywords: Other Networks; Imaginary Media; Imaginary Networks; Archaeology of the Internet

Abstract

Questo saggio è un estratto da *Other Networks: A Radical Technology Sourcebook* di Lori Emerson, che riunisce l'Introduzione del volume e il capitolo dedicato ai media immaginari. *Other Networks* parte dal presupposto che Internet, così come lo conosciamo, non sia l'unica possibilità: lo stato attuale delle comunicazioni in rete (corporativizzate, sorvegliate, monolitiche) rappresenta solo una delle molte configurazioni possibili. Attraverso una tassonomia di sistemi di comunicazione che precedono o esistono al di fuori di Internet, Emerson mette in luce la promessa di alternative nascoste. L'estratto comprende l'introduzione del libro e una selezione di reti tratte da questa tassonomia. La sua inclusione in questo volume riconosce *Other Networks* come uno dei contributi

* The curators are deeply grateful to Anthology Editions for granting permission to publish this excerpt from *Other Networks: A Radical Technology Sourcebook* (pp. 1–7 and pp. 178–90).

più significativi al nuovo orientamento politicamente impegnato dell'archeologia dei media—un approccio in sintonia con gli obiettivi e il percorso di ricerca del progetto *ARTCHAE*.

Parole chiave: Other Networks; Media immaginari; Reti immaginarie; Archeologia di Internet

1. Introduction

> The evolution of the means of mass communication seems to be going in two directions:
> toward hyper-concentrated systems controlled by the apparatus of state, of monopolies, of big political machines with the aim of shaping opinion and of adapting the attitudes and unconscious schemas of the population to dominant norms;
> toward miniaturized systems that create the possibility of a collective appropriation of the media, that provide real means of communication, not only the "great masses," but also to minorities, to marginalized and deviant groups of all kinds.
> On the one hand: always more centralization, conformism, oppression; on the other, the perspective of a new space of freedom, self-management, and the fulfillment of the singularities of desire.
> (Guattari 1993)[1]

> What began as a mere sensation is beginning to take form, the form of another internet. We're starting to hear the drone more clearly now, inside echoing sound effects and programs with compilation errors, far down the deep web. And we hear it from other places too. It calls to us when we water the tomato plants near the modem. We've started to notice little formations and signs in the steam from the teakettle . . . as if all around us new life forms are emerging. We notice that when we see these signs, the ordinary internet becomes difficult to use. The router blinks yellow, is interrupted or made useless by a hellish mess. Spam flows unfiltered into the inbox and videos we didn't search for start playing on the screen, like a poltergeist throwing things around inside our machines. Terese, Venke and I christen this internet the cosmic internet.
> (Hval 2020)

In 1972, after four years as publisher of the *Whole Earth Catalog*—an oversized publication also overstuffed with writeups, editorials, drawings, and straightforward information on tools, tool-making, books, and ideas relevant especially to the San Francisco Bay Area counterculture—Stewart Brand wrote a piece for *Rolling Stone* magazine detailing the surprising convergences he saw happening between computer scientists at cutting-edge research institutions like Stanford

1 In this and all other bibliographic references, the curators follow the author's choice of not providing quotations' page numbers given the purpose of including non-academic public among its readers.

University and Xerox Parc and the "computer bums" working to bring "computers to the people." As biographers are fond of saying, "it was a heady time" for both computing and the development of computer networks. Time-sharing networks,[2] which first emerged in 1961, had been around long enough that members of the counterculture (Brand's so-called "computer bums") were well on their way to launching their celebrated grassroots "Community Memory" project in 1973 (Community Memory, as well as Brand's article, are discussed in much greater depth in this book's entry on time-sharing networks). Alongside this development, the ARPANET (a packet-switched network that is almost always referred to as the progenitor of the modern day internet) had also been active since 1969; minicomputers had emerged in the mid-1960s as smaller, more affordable alternatives to mainframe computers; microcomputers, smaller and even more affordable computer kits for hobbyists, had begun appearing in 1971; and we were just a few years away from the advent of personal computers, pre-built machines for home use that featured keyboards and screens.

By the early 1980s, an international power struggle was brewing over whether and how to connect the bafflingly wide array of computers and local, national, and international computer networks, which eventually resulted in the worldwide adoption of the protocol TCP/IP: the Transfer Control Protocol/Internet Protocol, which enabled the interconnection of nearly any computer network to create the world's largest network of networks that we now call "the internet" (even when we properly mean the World Wide Web, just one of the networks on the internet). Thereafter, as networks gradually moved away from the domains of government-regulated postal, telegraph, and telephone services (PTTs) and research institutions and toward the domain of massive international conglomerates, it became next to impossible to determine where one network ended and another began—let alone where these networks were, how they worked, and how to determine the nature of our access. The "community" of Community Memory had largely been eclipsed by a kakistocracy of corporations. At the same time as this momentous shift took place from the late 1960s to the mid-1990s, the public's collective memory of what had come before this period grew increasingly blurry and ill-defined, particularly in the face of the oft-repeated stories of the internet's invention and its status as the apex of (largely American) innovation.

Now we are in 2024, and misinformation (driven by any combination of bad actors, political regimes, bots, and AI) is a daily norm, as are tracking, surveillance, and the monetization of every single click, scroll, or pause. At this moment, the internet seems to represent the very opposite of innovation, inventiveness, and progress (especially if by "progress" we mean a move toward

2 The many significant and overlapping connections between other networks, even between those that are imaginary and those that are real, are indicated by entry names and their numerical designation in the "related" field; related networks are also referenced in the description fields.

a more just and equitable society that has unencumbered access to information and knowledge). Even tech entrepreneurs seem aware we are living through a turning point—although, depending on their values and investments, opinions vary on whether today's internet is taking a turn for the worse or for the better. In December 2023, American technology executive and entrepreneur Anil Dash (arguably the Stewart Brand of the twenty-first century) penned a piece, also for *Rolling Stone*, in which he declared that, with the increasing popularity of the relatively new and noncommercial social media platform Mastodon along with the "raucous hedonism of Bluesky […] and the at-least-it's-not-LinkedIn noisiness of Threads, brought to you by Instagram, meaning Facebook, meaning Meta," the world is witnessing "the complexity and multiplicity of the weirder and more open web that's flourishing today." But, despite the potential pleasures offered by these platforms, how "weird" can they really be if they all use the same protocol and exist on the same infrastructures owned by the same multinational conglomerates?

Although I might not share Dash's enthusiasm for certain emerging social media platforms, and even though most major internet platforms are still continuing to push for the "centralization, conformism, oppression" to which Félix Guattari referred in 1993, I do think we are witnessing a concomitant shift toward what Guattari also observed: "miniaturized systems that create the possibility of a collective appropriation of the media." To me, more compelling than the small servers participating in the larger Mastodon "fediverse" are alternative networks ranging from barbed wire Fence Phones to zines and mail art [Postal System], Telefacsimile, Videophone, Telex, Microbroadcasts, Packet Radio Networks, Teletext, and Videotex—networks from the past that either still exist or are being revived. More, as I have tried to demonstrate throughout this book by including examples of experiments with or on these networks, we often don't know just how compelling a given network can be until we see *artists* exploring its limits and possibilities. (Not surprisingly, however, just as we rarely understand how networks actually work, from the moment we send to the moment we receive, we also rarely attend to the underlying workings of media art. Stories abound of how, for example, artists from the 1970s and 1980s plugged this into that which resulted in certain fascinating outputs; but details are often frustratingly lacking or altogether absent on *how* the connections took place, even when the "how" is exactly the point).

The time is ripe to build on the work already done by scholars such as Kevin Driscoll, Doron Galili, Judy Malloy, Charlton McKilwain, Cait McKinney, and Joy Lisi Rankin (to name just a handful of the most recent examples) and excavate all those networks that came before, thereby reenlivening our sense of what we would like the internet to be. And the act of excavating, of digging down to uncover how these networks worked, is key: it is not enough to merely swap stories about networks we might not have heard of before, or to marvel

at "weird" experiments undertaken with them. In defiance of the culture of exclusivity and the cultivation of an appearance of difficulty and inaccessibility that has defined telecommunications since the advent of amateur radio in the early twentieth century, this book has been written with the aim of demystifying how networks work and laying the groundwork for anyone to, say, try attaching analog telephones to barbed wire, or try picking up a soldering iron to build a super simple FM radio transmitter. *Other Networks* is written not only in the belief that another internet is possible, but that we are all capable of building our own networks.

1.1 The "Other" Networks

And just what are "other networks"? We have become so accustomed to associating networks with computer networks that it is easy to forget: networks have long been deeply heterogeneous and difficult to classify. They also have existed for nearly as long as human civilization has existed.

My initial goal was to compile an inventory of networks that preceded the internet, by which I meant any network that existed before the widespread adoption of TCP/IP. This would have been simple enough, if it weren't for the fact that the adoption of TCP/IP took over a decade (or longer) to happen, and also for the fact that (as it turns out) one may run a network on TCP/IP but not necessarily connect that network to the internet. Moreover, it also turns out that nearly countless computer networks emerged throughout the 1960s, 1970s, and 1980s—so many, in fact, that this book would need to expand to another two or three volumes to include them all. These more recent networks also present intriguing complications when it comes to classification: according to the taxonomy used in this book, they would mostly be considered "hybrid," in that they used (often undocumented, frequently proprietary) combinations of wireless and wired infrastructures, and they also often relied upon a wide range of protocols and/or software that this book's structure, biased as it is toward material infrastructure, cannot quite account for. My imperfect solution, then, has been to include only one digital computer network (time-sharing networks) as a way to gesture to all the other "other networks" that remain to be documented and to try to account for many (not all and not even most) networks that did not use TCP/IP. For the sake of ensuring my definition of 'network' isn't defined only in relation to computer networks, I understand a network as the connection between two or more nodes that facilitates human communication (thereby excluding networking technologies such as radar that are mostly used for tracking).

1.2 The Order of Things

Readers who are accustomed to reading conventional histories of technology driven by a narrative arc—a story that moves from origins through phases

of development and ends with broad acceptance—will find *Other Networks* disorienting. Why aren't networks listed chronologically? Why doesn't the year that fill-in-the-blank network was invented correspond to what appears on Wikipedia or in the *Encyclopedia Britannica*? What is this taxonomy of networks?

Throughout the process of writing this book, I learned firsthand that the idea any given thing was "invented" in a given year, in a given place, by a given person is often a convenient fiction, or a conclusion driven by the assumption that, for example, a technology does not yet exist until it has been implemented in a commercial context. I also learned that most histories of technology assume (or gloss over) a taxonomy of objects within which technologies fit. For example, we tend to believe we know what a telephone, or a radio, or a television is. Moreover, we are generally not eager to read endless stories complicating these beliefs. But what if our definitions of these technologies are driven by unsubstantiated stories about them that have been passed down for many generations? What if our sense about a given technology is based on our experience of it—perhaps our observations of what is happening on a screen—rather than on how the technology works or the nature of its underlying infrastructure? What if it turns out that there is such a thing as, for example, a Telephonic Telegraph? What if the Telephone was also originally designed for one-to-many broadcasting rather than just two-way voice conversations? What if there was and still is such a thing as Wired Radio, also known as "wired wireless"? What if Telefacsimile, Videophone, and Broadcast Television were, for some years, barely distinguishable from each other?

Thus, in the face of our increasing lack of access to or information about the material underpinnings of our telecommunications networks, I have tried to organize these other networks by their underlying infrastructure as a way to push us to think harder about: where networks are, how they work, how they are connected to each other, who owns them, and even whether we can build our own. However, while taxonomies can open up new ways of thinking about objects and their relationships to each other, they are also all, inevitably, flawed. Many times while writing *Other Networks*, I have thought of the opening pages of Michel Foucault's *The Order of Things* (1966) in which he describes Jorge Luis Borges's fictitious taxonomy of animals called the "Celestial Emporium of Benevolent Knowledge." In this wonderfully impossible taxonomy, "animals are divided into: (a) belonging to the Emperor, (b) embalmed, (c) tame, (d) sucking pigs, (e) sirens, (f) fabulous, (g) stray dogs, (h) included in the present classification, (i) frenzied, (j) innumerable, (k) drawn with a very fine camelhair brush, (1) *et cetera*, (m) having just broken the water pitcher, (n) that from a long way off look like flies." Foucault's observations about this taxonomy are relevant to *Other Networks* because he reminds us that the "exotic charm of another system of thought, is the limitation of our own, the stark impossibility of thinking *that*." Taxonomies, like networks themselves, open up some

possibilities for thinking and experiencing the world and foreclose on others. In other words, can we really adequately rethink the future of the internet as a future of networks if we don't also attempt a radical re-organization of the category "network" which we have taken for granted for too long? What's more, the monstrosity of Borges's taxonomy lies in the fact that it presents us not with utopias that "afford consolation . . . [an] untroubled region in which they are able to unfold . . . cities with vast avenues, superbly planted gardens, countries where life is easy, even though the road to them is chimerical." Instead, the utterly foreign taxonomy provides us with "heterotopias" that run counter to the comforting, smooth narratives of utopias; they "desiccate speech, stop words in their tracks, contest the very possibility of grammar at its source; they dissolve our myths and sterilize the lyricism of our sentences." While the taxonomy of *Other Networks* might not be entirely monstrous, I hope it runs counter enough to how we normally think of networks that it unsettles our sense of what we have for too long assumed to be true.

Another noteworthy oddity that emerges from classifying networks according to their underlying infrastructure is that we can see how, over time, the infrastructure, the technology, the network, the type of transmission, and sometimes even the act of communicating at a distance have all been called the same thing. No doubt the indeterminate nomenclature is just yet another illustration of how the materiality of networks has been consistently ignored or even effaced and therefore misunderstood over the past two hundred years or so. As an example of the latter, there is often little documentation about whether many of the so-called telegraphic networks in the late nineteenth century actually used telegraph wires or telephone wires, especially since "telegraph" was often used as a term to describe any kind of communication at a distance; at times, I have had to make an educated guess on whether the network was a telegraph or telephone network based on descriptions of whether the network used one wire (which implies a telegraph network), two wires (which implies a telephone network) or even a two-wire circuit (which also implies a telephone network).

1.3. The Future of the Internet Is the Future of Networks

Another way of stating the impetus behind *Other Networks* is that, while the excavation of alternative networks is important for the sake of a full historical record, it is also important for giving us tools to imagine how networks might be different. It allows us to ask "what if" questions. Insofar as it is an inventory of networks and experiments with and on those networks, this book attempts (and admittedly does not always succeed) to demonstrate the possibilities of past and present alternatives from all over the world, not just from the U.S.A., as a way to globalize and pluralize histories of the internet and to empower readers to reimagine the future of the internet as the future of networks.

Readers will note the final section of this book includes a small selection of "Imaginary Networks." And while I'm unquestionably being playful in suggesting that imaginary networks are "real" networks, I am also being serious in pointing to all the ways imaginary networks have contributed to the creation of real-life networks and have also, crucially, created parameters for what is possible. As Eric Kluitenberg pointed out in his 2006 edited volume *The Book of Imaginary Media*, "all media are partly real and partly imagined," just as all networks are both real and imagined, residing in both the present and an as-yet-unrealized future. More pointedly, Ruha Benjamin reminds us that "imagination" is not a neutral place that exists elsewhere, or to which we retreat. Instead, "imagination is a contested field of action […] a resource, a battleground, an input and output of technology and social order. In fact, we should acknowledge that most people are forced to live inside someone else's imagination and one of the things we have to come to grips with is how the nightmares that many people are forced to endure are the underside of elite fantasies about efficiency, profit, and social control." Benjamin then reminds us that racism, not unlike a technology (as we learned from Lisa Nakamura), is an axis of domination that "helps produce this fragmented imagination, misery for some, monopoly for others." One powerful alternative to this fragmented imagination is "radical imagination"—one that inspires us "to push beyond the constraints of what we think, and are told, is politically possible."

In the course of any attempt to activate radical imagination by pluralizing networks, it's clear we also need to ask hard questions: Who imagines networks for whom? Why and how does access take place? How is access to the network made difficult or impossible? Likewise, these questions need to be accompanied by pragmatic considerations: in any push to decentralize and miniaturize networks, it may not be realistic or even desirable to also push for leaving the internet altogether in favor of setting up legions of microbroadcasting stations or small mesh networks. Legacy Russell reminds us that the internet "still provides opportunity for queer propositions for new modalities of being and newly proposed worlds." The internet is still, for many, an aid to survival. I am wary, then, to suggest that *Other Networks* provides us with a blueprint to leave the internet behind altogether. Instead, I hope it opens up the possibility for choice—it is, after all, a sourcebook—a means of reawakening our sense of possibility by the excavation of networks from the past.

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2. Imaginary Networks[3]

In the opening pages of *The Book of Imaginary Media*, Eric Kluitenberg writes that "like communities, all media are partly real and partly imagined. Without either actual or imaginary characteristics, media cannot function." This book ends, then, with the invitation to explore the imaginary networks that have existed in, through, and around real networks, on a spectrum ranging from the bizarre to something just-this-side of the possible. What if networks involved the dead? Directly connected one brain to another? Used pigeons as part of a suite of internet protocols? Harnessed the quirks of quantum entanglement and produced faster-than-light communication [61]? This section uses the dystopic world of Neal Stephenson's fictional Metaverse [63] (in which the wealthy appear in higher resolution in this world's network of virtual realities) as motivation to instead pave the way for alternative networks that are part and parcel of a collectively-owned future no longer solely determined by ever-accelerating, global accumulation of capital.

[53] Necromancy
Country of Origin: present-day Egypt and Iraq (Ancient Egypt and Babylonia)
Creator(s): Unknown
Year conceived: Age of Antiquity (3000–400 BCE)
Basic Infrastructure/Materials: may include hallucinogenic plants, specially prepared rooms or altars, stones, mirrors, crystals, child or adult mediums
Related: Telepathy [56], Cosmic Internet [66]
Description: Necromancy is a type of ritual magic involving the conjuring of and/or communication with demons, angels, fairies, and (more rarely in the long history of the practice) deceased humans and nonhuman animals, in order to divine the future, answer pressing questions, or bring the dead back to life. It is, therefore, a kind of one-to-one network between the living and the dead. Necromancy was first used in ancient Egypt, Babylonia, Greece, and Rome. With the arrival of Latin translations from the Iberian Peninsula, it also experienced a revival in twelfth and thirteenth century Europe. It continues today in many parts of the world, and involves diverse techniques including inscriptions (such as the drawing of circles on the ground), signs (such as the pentagram), spells, and actions involving a wide range of objects, from swords, jugs, and candles to stones, mirrors, crystals, and so-called child mediums.
Sources: Frank Klassen (2019); Giralt (2017).

3 In this second paragraph, corresponding to the book chapter "Imaginary Networks" (pp. 178–90), each network is provided with a number in brackets, which reflects the atlas-like structure given to the volume. The networks/numbers that are mentioned here without being analyzed are fully addressed in other pages of the book [Footnote of the Curators].

Figure 1. Portrait of "Edward Kelly a magician, raising the ghost of a person lately deceased, in the church yard of Walton-le-Dale, Lancaster" from roughly 1740. Public domain.

[54] Pasilalinic-Sympathetic Compass

Country of Origin: France

Creator(s): Jacques-Toussaint Benoît

Year conceived: 1850

Basic Infrastructure/Materials: wooden beams, zinc bowls, cloth, copper-sulphate solution, glue, snails

Related: Radiotelegraphy,Telepathy [56]

Description: The pasilalinic-sympathetic compass, also referred to as "snail telegraph," was created by French occultist Jacques-Toussaint Benoît, possibly with the assistance of someone named Monsieur Biat-Chrétien (an individual whose existence

has not yet been proven), to demonstrate that snails are capable of instantaneously and wirelessly transmitting messages to each other across any distance. Benoît's theory was that in the course of mating, snails exchange so-called "sympathetic fluids" which creates a lifelong telepathic bond and also enable them to communicate with each other. He believed he could induce snails to transmit messages faster and more reliably than by wired telegraph by placing a snail on top of a letter and then prodding it with an electric charge, after which the snail would transmit the letter to another snail placed at some distance. The pasilalinic-sympathetic compass itself consisted of twenty-four different wooden structures containing a zinc bowl, cloth that had been soaked in copper sulphate, and a snail glued to the bottom of the bowl. Benoît unsuccessfully demonstrated the snail telegraph to a journalist from *La Presse*, Jules Allix, in October 1850.

Sources: *Sympathetic Snail Compass* (1851); Baring-Gold (1889); Butterworth (2011).

Figure 2. Satirical cartoon by Honoré Daumier (1869) captioned "Progrès. Les Escargots non sympathiques." ("Progress. Unsympathetic Snails.") Originally published in *Le Charivari*, September 25, 1869. Public domain.

[55] Telephonoscope
Country of Origin: U.K.
Creator(s): George du Maurier
Year conceived: 1878
Basic Infrastructure/Materials: two telephones, two camera obscuras
Related: Telephone [34], Telautograph [36], Videophone [38], Cable Television [48]
Description: On December 9, 1878, the British weekly magazine *Punch* published George Du Maurier's cartoon titled "Edison's Telephonoscope." The communication device (which was imagined as conveying two-way sound and one-way vision) was described as an "electric camera obscura." But, given that the cartoon depicted an older couple in London communicating with their daughter in the Crown colony of Ceylon (now Sri Lanka)—a daughter who is, in Doron Galili's words, "standing next to a badminton court surrounded by other colonialists and a native woman"—it's clear that the telephonoscope also represents the nineteenth century desire for a technology that could globally transmit colonialist and bourgeois ideals.
Sources: Galili (2020); Roberts (2017).

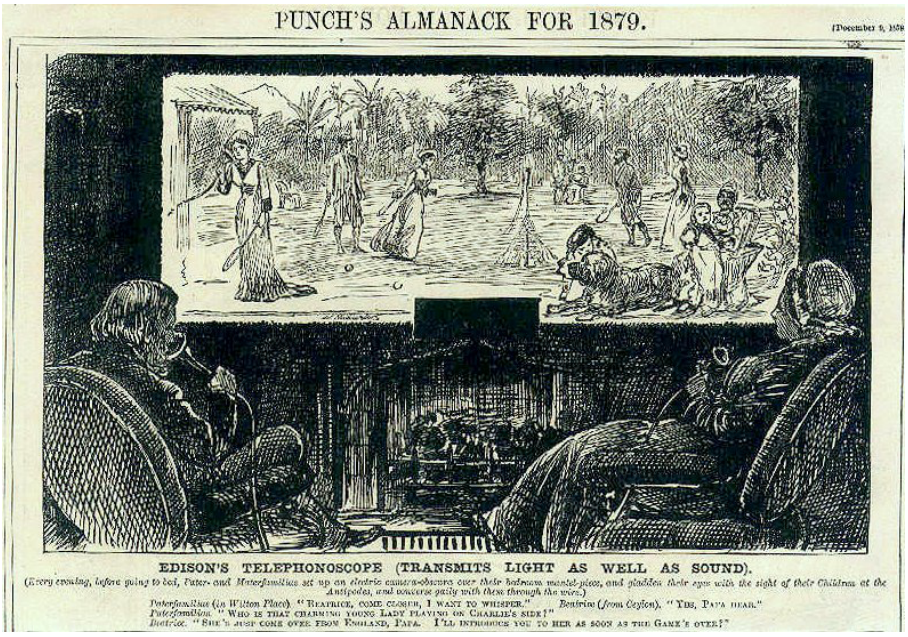


Figure 3. "Edison's Telephonoscope (Transmits Light as Well as Sound)" by George Du Maurier, published in *Punch's Almanack* for 1879. Public domain.

[56] Telepathy

Country of Origin: U.K.

Creator(s): W. F. Barrett, C. C. Massey, Rev. W. Stainton Moses, Frank Podmore, Edmund Gurney, Fredric W. H. Myers

Year conceived: 1882

Basic Infrastructure/Materials: two or more conscious and sentient beings

Related: Necromancy [53], Pasilalinic-Sympathetic Compass [54], Cosmic Internet [66]

Description: Telepathy (also known as mind reading, thought reading, and brain-to-brain communication) is the purported human and/or nonhuman animal ability to transmit information directly to another without either speech or gesture and without the use of any physical media other than body/mind. The term "telepathy" was coined by W.F. Barrett, C.C. Massey, Rev. W. Stainton Moses, Frank Podmore, Edmund Gurney, and Fredric W. H. Myers, who wrote in 1882, "… we venture to introduce the words *Telaesthesia* and *Telepathy* to cover all cases of impression received at a distance." In the late nineteenth century, various mentalists and magicians claimed telepathic abilities could be demonstrated as a result of finely honed skills for reading individuals' ideomotor and muscular movements; otherwise, nearly all attempts to prove the existence of telepathy in the twentieth century failed. In 2014, however, a team of researchers (Grau et al.) successfully demonstrated "Conscious Brain-to-Brain Communication in Humans Using Non-Invasive Technologies" (described below); some interpret this as proof of the existence of the possibility of telepathic communication.

Experiments: In 1992, Brazilian artist Mario Ramiro and Japanese artist Morio Labonete Nishimura created *Entre o Norte e o Sul* (*Between North and South*), a telepathic telecommunications experience connecting Greece and Finland using the surrounding scenery. The work consisted of an installation in each country—a wood structure in the forest next to Lake Pitäjärvi (Finland) and a stone structure on a rock formation on the island of Amorgós (Greece). As Ramiro describes it, the antennas "were made of glass tubes containing water from the Rhine River and strands of the artists' hair connected by gold leaves. Nishimura's 'antenna' was placed at the center of his piece, inside a carved lotus flower, the image he chose for his transmission to Greece. Ramiro's 'antenna' was positioned atop a large stone, upon which he drew the image of a burning sword. The artists sketched the images they 'received' and later compared the drawings, some of which resembled the intended transmission."

While they didn't set out to prove telepathy as such, an international team of researchers demonstrated successful brain-to-brain communication in 2014. Corinne Iozzio describes the process as follows: "First, the team had to establish binary-code equivalents of letters […]. Then, with EEG (electroencephalography) sensors attached to the scalp, the sender moved either his hands or feet to indicate a 1 or a 0. The code then passed to the recipient over email. On the other end, the receiver was blindfolded with a transcranial magnetic stimulation (TMS) system on his head […]. The TMS headset stimulated the recipient's brain, causing him to see quick

flashes of light. A flash was equivalent to a '1' and a blank was a '0.' From there, the code was translated back into text. It took about 70 minutes to relay the message." *Sources*: Barrett et al. (1882); Oppenheim (1985); Luckhurst (2002); Carles Grau et al. (2014); Iozzio (2014); Ramiro (1998).

[57] Ley Lines
Country of Origin: England
Creator(s): Alfred Watkins
Year conceived: 1921
Basic Infrastructure/Materials: may include any combination of prehistoric sites, ancient churches and crosses, moats and fords
Related: Cosmic Internet [66]
Description: In 1921, businessperson and amateur archaeologist Alfred Watkins hypothesized that straight lines embedded in the British landscape formed what we would today call "a network" connecting prehistoric sites, ancient churches and crosses, moats, and fords. Watkins believed that these lines were likely created in the late Neolithic period by the alignment of hilltop sighting points, and that objects on the lines were thus actually vantage and/or signaling points. He dubbed these lines "leys" in reference to the ancient Saxon word for "cleared land" and stipulated that the existence of a line is proven by the alignment of any four objects listed above "with a hill peak at one end, and with bits of old tracks and antiquarian objects on the line." While archaeologists have consistently denied the existence of ley lines, enthusiasts since the 1970s have claimed the lines form a network of earth energies. *Sources*: Watkins (1922); *Encyclopedic Dictionary of Archaeology* (2021); Netzley (2006); Charlesworth (2010).

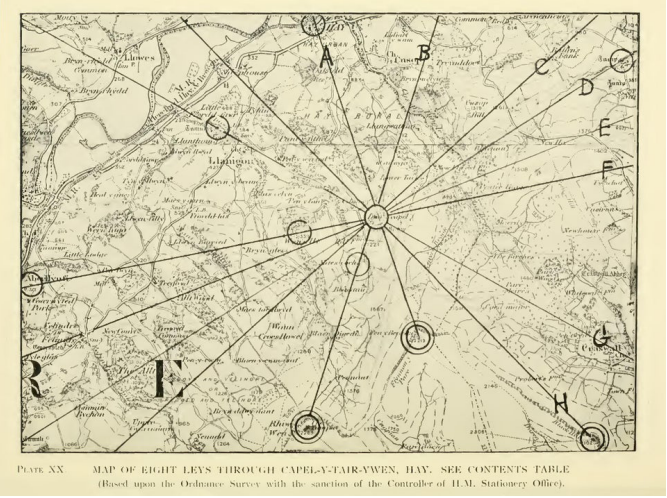


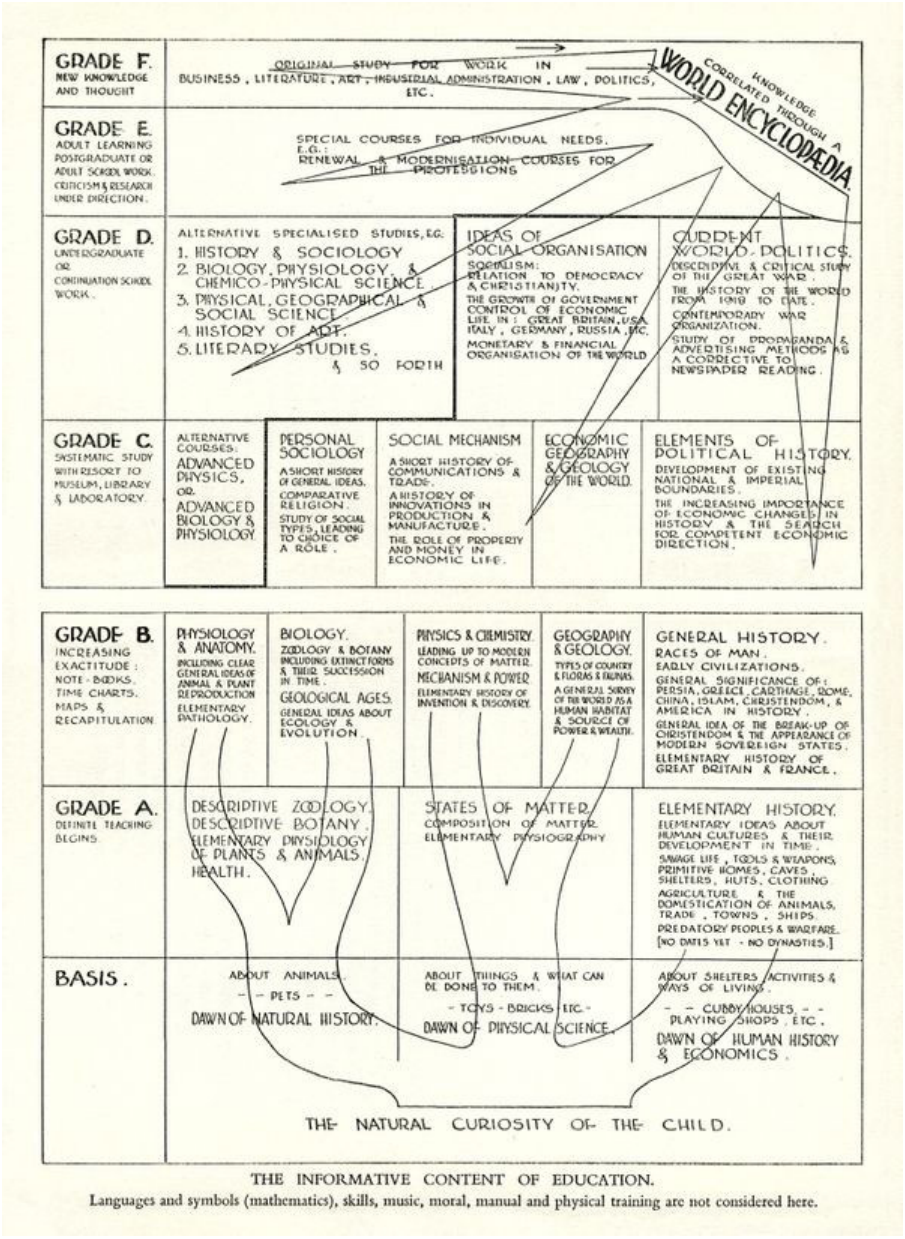
Figure 4. A map of eight ley lines in Wales, from Alfred Watkins' *Early British Trackways* (1922). Public domain.

[58] The Mundaneum
Country of Origin: Belgium
Creator(s): Paul Otlet
Year conceived: 1934
Basic Infrastructure/Materials: index cards and/or documents; filing cabinets; any combination of media including telephone, radio, microfilm, phonograph/record, television; multimedia workstation
Related: Radio Broadcast [17], book [43], Library [42], Telephone [34], Cable Television [48], World Brain [59], Memex [60], Project Xanadu [62]
Description: The Mundaneum was initially called Le Palais Mondiale and was co-conceived with Paul Otlet and Henri La Fontaine in 1910. Le Palais Mondiale took the form of numerous rooms in a government building in Brussels filled with index cards and vertical filing cabinets that provided an "encyclopedic survey of human knowledge, as an enormous intellectual warehouse of books, documents, catalogues and scientific objects." By 1934, after the project had been renamed the Mundaneum, Otlet moved on to envisioning a "réseau mondial" or worldwide network that would allow people to access information in numerous Mundaneums as well as millions of other linked documents, images, audio, and film via workstations. As Otlet describes it, the workstation "no longer carries any books. Instead there is a screen connected to a Telephone. Over there, in a great building, are all the books and related material, with all the space necessary for cataloging and registering them […]. From there one could call up a page on screen to read the answer to questions posed by telephone. The screen could be double, quadruple or [decuple] if there are multiple texts to show simultaneously; there would be an audio speaker if needed for additional material to complement the text." Each station would also allow individuals to upload files and communicate with others wirelessly.
Sources: Otlet ([1914] 1990); Wright (2014); Rayward (2013).

[59] World Brain
Country of Origin: U.K.
Creator(s): H.G. Wells
Year conceived: 1938
Basic Infrastructure/Materials: any combination of printed material, radio, photography, microfilm
Related: Book, Library, Mundaneum [58], Memex [60], Project Xanadu [62]
Description: In his 1938 collection of essays and lectures, *World Brain*, H.G. Wells describes his vision of a "new social organ, a new institution" that he calls alternately a "World Brain" or "World Encyclopaedia" that would bring together "all the scattered and ineffective mental wealth of our world into something like a common understanding, and into effective reaction upon our vulgar everyday political, social and economic life." The new organization he proposed would, he believed, prevent "transatlantic misunderstandings" by way of this "common interpretation of reality" and it would include materials from museums, art galleries, libraries, atlases, and surveys. The process of bringing together these materials and documenting them

would involve radio, photography, and especially microfilm so that "*any* student, in *any* part of the world, will be able to sit with his projector in his own study at his or her convenience to examine *any* book, *any* document, in an exact replica." The content of the World Brain itself would consist of expert-approved selections, extracts, and quotations that would, in W. Boyd Rayward's words, be "carefully collated and edited and critically presented. It would be not a miscellany, but a concentration, a clarification and a synthesis." It is often touted as an influence on the late-twentieth century World Wide Web and Wikipedia, even though both platforms have been shown to have highly unreliable methods for creating, editing, and moderating content.
Sources: Wells (1938); Rayward (1999).

[60] Memex
Country of Origin: U.S.A.
Creator(s): Vannevar Bush
Year conceived: 1945
Infrastructure/Materials: desk, screens, keyboard, buttons and levers, printed matter, microphotography
Related: Book, Library, Mundaneum [58], World Brain [59], Project Xanadu [62]
Description: In July 1945, reflecting on what lay in store for scientists in the aftermath of World War II, Vannevar Bush described his vision of the Memex: a device he had been designing since the 1930s which could solve the ever-increasing production and specialization of scientific literature by allowing individuals to make, store, and consult any piece of information in almost any medium of the time. He also made clear that the problem at the time was not necessarily technological, but rather organizational, and that the arrangement of records alphabetically or numerically does not allow the scientist to easily find the information they are seeking. Thus, the Memex mechanizes the organization of information by association—which is, for Bush, the way "the mind [already] works," "in accordance with some intricate web of trails carried by the cells of the brain." In terms of its physical design, the Memex would be a desk with screens, a keyboard, buttons and levers for creating and accessing (at variable speeds) what he called "trails" through the user's collection of books, newspapers, periodicals, photographs, etc. which in turn would be stored on microfilm. While the Memex was never built, these references to associational thinking represented in terms of webs and trails certainly influenced Theodor Nelson's notion of hypertext as well as the creation of the World Wide Web.
*Source*s: Bush (1945); Barnet (2013).



THE INFORMATIVE CONTENT OF EDUCATION.

Languages and symbols (mathematics), skills, music, moral, manual and physical training are not considered here.

Figure 5. An illustration of the pedagogical value of a "World Encyclopedia," from H.G. Wells' book *World Brain* (1938). Public domain.

[61] Faster-than-light Communication Networks
Country of Origin: U.S.A.
Creator(s): Albert Einstein
Year conceived: 1947
Basic Infrastructure/Materials: Unknown
Related: Infrared Communication, Ultraviolet Communication, Laser Communication, Visible Light Communication, Necromancy [53], Telepathy [56], Pandoran Neural Network [65], Cosmic Internet [66]
Description: Sometimes referred to as "superliminal communication," faster-than-light (FTL) communication refers to a well-trodden (even amongst physicists) but still purely hypothetical situation in which information travels faster than the speed of light. In a letter to Max Born in 1947, Albert Einstein referred to the possibility of what he called "spooky action at a distance" that could result from quantum entanglement; the latter occurs when two particles are able to share information with each other even if they are physically separate. Although Einstein dismissed the idea in the same letter to Born "because the theory cannot be reconciled with the idea that physics should represent a reality in time and space," in recent decades physicists have in fact demonstrated that "spooky action at a distance" does actually occur. The unanswered question, however, is whether *information* can also travel faster than 186,282 miles per second (the speed of light in a vacuum).
Experiments: In Ursula LeGuin's novel *Rocannon's World* (1966) she coined the term "ansible" (a contracted form of "answerable") to refer to a particular kind of FTL communication device that can send and receive messages instantaneously, even when sending/receiving across star systems. She continued to develop the device in subsequent novels such as *The Left Hand of Darkness* (1969) in which she wrote that the ansible "doesn't involve radio waves, or any form of energy. The principle it works on, the constant of simultaneity, is analogous in some ways to gravity […]. One point has to be fixed, on a planet of certain mass, but the other end is portable." Other science fiction writers such as Isaac Asimov and Vernor Vinge have adopted the terms "ultrawave" and "hyperwave" to refer to other forms of FTL communication.
Sources: Einstein (2014); Parks (2018); Popkin (2017); LeGuin (1966, 1969).

[62] Project Xanadu
Country of Origin: U.S.A.
Creator(s): Theodor H. Nelson
Year conceived: 1960
Basic Infrastructure/Materials: personal computer, screen, keyboard, Xanadu software, wired or wireless internet connection
Related: Book, Library, Mundaneum [58], World Brain [59], Memex [60]
Description: Throughout its lifetime, Project Xanadu has been variously a proposal, software, imagined online network for linked documents, and web-based demo. It is, then, in some sense only partly an imaginary network. Though implementations in Algol and Fortran existed in the early 1970s, with beta versions released in the

1980s, 1990s, and 2000s, a final version has not (yet) been released. At the heart of Project Xanadu is hypertext—an idea that Theodor Nelson came up with in 1960, coined in 1963, and wrote about in 1965. Nelson then chose "Xanadu" (named after the beautiful imagined landscape in Samuel Taylor Coleridge's poem "Kubla Khan") in 1967 to describe the project as a whole. As Belinda Barnet puts it, it should have been "like the Web, but much better: no links would ever be broken, no documents would ever be lost, and copyright and ownership would be scrupulously preserved." Certain incarnations of Xanadu involved Xanadocs (the basic document unit within the system), Xanalinks (the linking mechanism which also provided for self-repairing links), and Xanadu servers running both locally and globally.
Sources: Project Xanadu website; Nelson (1965, 1974, 1980); Barnet (2013).

[63] Metaverse
Country of Origin: U.S.A.
Creator(s): Neal Stephenson
Year conceived: 1992
Basic Infrastructure/Materials: internet, goggles, earphones
Related: n/a
Description: Neal Stephenson coined the term "metaverse" in his 1992 cyberpunk novel *Snow Crash*. Set in the twenty-first century, the metaverse Stephenson envisions in his novel is—like the contemporary metaverse that's currently being driven in part by the rebranding of Facebook as "Meta"—an internet of connected virtual spaces that users enter; but unlike the rhetoric surrounding the real world metaverse that's slowly coming into view, Stephenson explicitly positions his fictional Metaverse as a dystopic escape from an even more dystopic bleak world of global economic collapse and corporate monopolies (ironically, not unlike the actual twenty-first century world). In the novel, users access the Metaverse with goggles, earphones, and virtual avatars of themselves and, in extreme circumstances, they also experience real-world consequences (including addictions and brain damage) for their actions in the virtual world.
Sources: Stephenson (1992).

[64] The Clacks
Country of Origin: U.K.
Creator(s): Terry Pratchett
Year conceived: 1999
Basic Infrastructure/Materials: wood panels, pulleys, shutters, lamps
Related: Hydraulic Semaphore, Optical Telegraph, Signal Lamp, Pony Express, Email Letter
Description: In Terry Pratchett's fantasy novel *The Fifth Elephant* (1999), the twenty-fourth book in the Discworld series, he introduces a network of semaphore communication towers called "Clacks" that he continued to develop throughout the series. Standing at roughly three stories tall and made of wood panels, pulleys, shutters, and lamps for nighttime transmission, the towers in the network closely

resemble telegraph towers. No doubt as an echo of the Pony Express, the network was managed by the Grand Trunk Company. As the network expands across the series, it starts to incorporate technologies and terminologies from other time periods; for example, operators develop a system of punch cards to automate message transmission; in *Going Postal* (2004), Pratchett also refers to messages sent over the network as "c-mail."
Sources: Pratchett (1999, 2004).

[65] Pandoran Neural Network
Country of Origin: U.S.A.
Creator(s): James Cameron
Year conceived: 2009
Basic Infrastructure/Materials: living organisms
Related: Necromancy [53], Telepathy [56], Faster-Than-Light Communication Network [61], Cosmic Internet [66]
Description: In James Cameron's 2009 movie *Avatar*, Pandora is an exoplanetary moon on which all the flora and fauna, including the humanoid inhabitants the Na'vi, communicate through a neural network they access at certain hubs using an extension of their nervous system called a "queue." The network itself is a collection of electro chemical connections between Pandoran trees. While it is partly used by the Na'vi to domesticate certain species, it also provides access to their own memories as well as those of their ancestors.
Sources: Cameron, James. dir. 2009. *Avatar*. 20th Century Studios.

[66] Cosmic Internet
Country of Origin: Norway
Creator(s): Jenny Hval
Year conceived: 2020
Basic Infrastructure/Materials: living and/or dead organisms
Related: Necromancy [53], Pasilalinic-Sympathetic Compass [54], Telepathy [56], Ley Lines [57], Pandoran Neural Network [65]
Description: As it drifts across time periods and musings about capitalism, patriarchy, communes, witches, and the power of anger, hatred, the body, and filth, Jenny Hval's novel *Girls Against God* (2020) also dips into imagining another internet. Early in the book she describes it as a form of "intimacy through the body's waste and secretions. A self-constructed network between bodies." By the last third of the novel, the network has become "the cosmic internet"—an invisible, intangible network that exists entirely outside of capitalism and which, in fact, functions best when all connections to the actual internet are severed, a network that seems to exist in the ether, linking bodies, plants, life-forms, and even the dead. She writes, "the cosmic internet communicates through noise […]. It creates confusion, poor connections, pixelated images and digital one-way streets." And further, the two characters in the novel "agree that in the long run, when it trusts us, the web will

evolve into a fleshy peer-to-peer network, where a small part of your flesh is always seeding."
Sources: Hval (2020).

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"She Is Shrouded": Some Exploratory Notes on Scaffolding as an Urban Practice between (Architectural) Construction and (Activist) Intervention*

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Abstract

This paper examines the urban phenomenon of scaffolding at the intersection of screen studies, architecture, and textile studies, with the aim of revealing hidden layers of power dynamics and gendered labor. First, it analyzes scaffolding as an architectural site of operation that combines techniques of supporting and protecting, framing and screening. Second, it focuses on scaffolding as an activist space of "in-between-ness" that allows for challenging the patriarchal politics of vision. A case in point is *Women at Work – Under Construction* (1999), a performance and video work by Maja Bajević, who uses scaffolding as a powerful tool to reverse the tension between outside and inside, public and domestic, visibility and invisibility.

Keywords: Scaffolding; Media Archaeology; Screen Studies; Textile Studies; Activism; Feminism; In-Between-Ness

Abstract

L'articolo esamina il fenomeno urbano dell'impalcatura all'intersezione tra screen studies, architettura e textile studies, con l'obiettivo di rivelare le dinamiche di potere e lavoro genderizzato che vi sono celate. Nella prima parte, analizza l'impalcatura come luogo operativo architettonico che combina tecniche di sostegno e protezione, messa in quadro e "messa in schermo". In seguito, si concentra sull'impalcatura come spazio interstiziale in cui l'attivismo si infiltra, sfidando le politiche patriarcali dello sguardo.

* In the early stages of this new research project, I am extremely grateful for the valuable suggestions I have received from Barbara Grespi, Samuele Sartori, Roberto Malaspina, Miriam De Rosa, Rossana Galimi, Helen Liene Dreifelds, Giulia Zompa, Maria Teresa Soldani, Nicola Lucchi, Ian Callender, Steven Manocherian, and the anonymous reviewer. I also would like to thank the audience at *ARTCHAE #1: Inside and Outside the Circuit* (March 14, 2025) for their generous feedback.

Lo studio di caso analizzato è *Women at Work – Under Construction* (1999), performance e opera video di Maja Bajević, che usa l'impalcatura in quanto potente strumento che permette di invertire le tensioni tra esterno e interno, pubblico e domestico, visibililtà e invisibilità.

Parole chiave: Impalcatura; Archeologia dei media; Screen Studies; Textile Studies; Attivismo; Femminismo; Spazio interstiziale

1. Heard on the Street

In the wake of the pandemic, I moved from Europe to New York City, where the streets were characterized not only by makeshift outdoor dining structures but also by a very large number of scaffolding and so-called sidewalk sheds, typically painted hunter green. While scaffolding is a structure that climbs and encloses the building, sheds cover the entire sidewalk like temporary arcades.[1] In the summer of 2023, city data showed there were "9,000 permitted construction sheds, spanning nearly 400 miles of the city's streets, that [were] up for an average of 500 days" (Honan 2023). This mileage corresponds to approximately 643 kilometers. Among its iconic buildings in scaffolding, there was—and still is—the Fuller Building, better known as the Flatiron Building, one of the city's first skyscrapers completed in 1902 and whose nickname derives from its triangular floorplan, recalling the shape of a cast-iron clothes iron (Fig. 1). One day, while I was looking up at the imposing yet elegant appearance of this wrapped building, I overheard a conversation between two American men; from what I could guess, it was a local showing his visiting friend around. Awestruck, the friend said in almost a whisper: "She is shrouded." This phrase, stolen on the street, has become the working title of my new research project, which attempts to give scholarly shape to an old obsession of mine: photographing buildings covered in scaffolding wherever I travel (and live).

Overhearing this conservation on 23rd Street between Fifth Avenue and Broadway made me think about a double shift in my research. First, I was struck by the use of the female pronoun in reference to the Flatiron Building. Since then, I have been thinking of "it" as a lady. As a non-native speaker, I was familiar with the English use of "she" for ships and cities but not for buildings.

1 In NYC, sidewalk sheds are installed not only for façade renovation but also for repair work on the inside, such as the replacement of windows. The installation of these scaffolding systems is a requirement by the Scaffold Law, dating back to 1885, that "holds owners and contractors fully accountable for injuries on construction sites, regardless of intent or negligence" (CREA United 2015). In 2013, the city imposed the color "Hunter Green 1390" for sidewalk sheds and construction fences so that they would blend in better with the trees on the street. This law has recently been amended to include more colors, such as white, metallic gray, or "any color that matches the building" (Brown 2025).

Figure 1. Shrouded Flatiron Building, New York City, USA, 2024.
From author's personal collection.

In fact, it is rather uncommon—but as with ships and cities, it evokes the image of a protective, maternal figure, or expresses, more generally, an emotional bond. Among New Yorkers, the Flatiron is indeed a beloved building. Crucially, this gender twist is also reflected in my research which is moving from a "genderless media-archaeological ideal" (Flaig 2018, 108) to a more pronounced

feminist perspective of "embodied objectivity that accommodates paradoxical and critical feminist [art] projects" (Haraway 1988, 581), with a strong focus on domestic practices, including the making—and ironing—of cloths and clothes. This coincides with the second change of direction in my research, from media studies to textile studies, which is embedded in the conceptual shift from "screen" to "shroud." It is the notion of being "shrouded" that impresses me most, as it sounds so solemn, so out-of-the-ordinary, albeit a bit ominous. As if the Flatiron Building, wrapped in a shroud, were ready for her burial. It immediately calls to mind Penelope's shroud, destined for her father-in-law Laertes, father of Odysseus, which she wove during the day and unwove during the night, as a double process of writing and unwriting. Or, even more so, the Holy Shroud of Turin, famously mentioned by André Bazin for "combin[ing] the features alike of relic and photograph" (1960, 8). As I discuss below, the notion of shroud is uncannily fitting for what I call "fake façades," construction screens with the imprint of the architectural façades they cover—a practice imposed in some countries by regulations of cultural heritage for the renovation of historic buildings and other landmarks.[2]

Yet scaffolding can also offer a space for artistic/activist intervention. In this article, I propose to follow the path not so much of Greek ill-fated heroines like Penelope and Arachne, but rather of contemporary media artists who use scaffolding in a creative and activist way. I will discuss the video work of Sarajevo-born Maja Bajević as an exemplary case, but there is still much more to explore. While my interest lies mostly in textile as a feminist practice, as a form of resistance in the patriarchal politics of vision, I want to stress from the very beginning that my double shift—from gender-neutral research to critical feminism, on the one hand, and from media/screen studies to textile/texture studies, on the other—is not meant to be an exclusion of perspectives, in the sense that one would replace the other or that media studies is sentenced to death. Rather, it should be seen as a diptych, whose panels need to be combined to get the full picture. This is also why a large part of this article deals with scaffolding as a general (urban) phenomenon, with special attention to the "hi-res" project by American photographer Peter Steinhauer on Hong Kong scaffolds, and only toward the end will I address the notion of "in-between-ness" as a feminist strategy to intervene in the tension between the inside (domestic sphere) and the outside (public sphere).

2 In Italy, for example, this is regulated by the Codice dei Beni Culturali e del Paesaggio (Legislative Decree 42/2004), which is aimed at cultural integrity.

2. From Screen(ing) to Scaffold(ing)

My fascination with scaffolding stems from my research on screens, more specifically from my etymological quest for the multiple origins of the term "screen." I later discovered this had also driven Erkki Huhtamo's screenology (2004). With my background in Romance Philology, I was thrilled to learn how rich the history of the word was—an exploration that began in the early 2000s when I was co-teaching Media Archaeology with Thomas Elsaesser at the University of Amsterdam (Strauven 2020). In one of his lectures, Elsaesser quoted from a 1900 edition of Webster's Dictionary where "screen"—both as noun and as verb—was defined in relation to the coal industry (and not yet in relation to the emerging moving pictures); it was the screen as sieve or filter, separating the coarser from the finer parts, the waste from the non-waste, in which Elsaesser was interested for a new take on the history of screens.[3] Other meanings provided by Webster's at the turn of the last century included: separation, shelter, protection, partition, concealment. In all these meanings, the screen was "something movable" (Webster 1900, 992). In his typical thought-provoking way, Elsaesser would point out that the cinema screen was an exception or an anomalous/ambiguous screen because it was making visible instead of hiding, projecting instead of separating, suggesting the transparency of a window instead of the opacity of a filter. Conversely, the TV screen clearly operates as a filter, that is, a sieve of electrons, and the computer screen is a grid, composed by vertical and horizontal lines of pixels.

While the etymological origins of the screen are intricate and uncertain, with the Latin root being either *cerno* (to separate) or *corium* (skin) and somehow going in circles from the Old French *escran* to the Middle High German *schrank* to the Middle Dutch *sce(e)rm* back to the Old German *skirm* (Strauven 2021, 155–72), the etymology of scaffolding seems at first more straightforward. Dating back to the mid-fourteenth century, the English *scaffold* derives—via an Old North French variant (*eschafaut*) of Old French—from the Vulgar Latin *catafalicum*, which is composed of the Greek *kata* (in the Medieval Latin sense of "beside, alongside") and the Etruscan *fala* (meaning "scaffolding, wooden siege tower") (Online Etymology Dictionary, n.d.). The Modern French *échafaud* is a reinforced form of the Old French *chafaud*, documented since 1160 in the sense of "framework supporting a platform" (Dauzat et al. 1989, 251, my translation). Thus, in its original meaning, the term belonged to the semantic field of construction and supporting structures. In the late fourteenth century, the English *scaffold* began to be used in reference to the theater as "raised platform on a stage in a play." By the mid-fifteenth century, it had acquired a more ominous meaning of platform for beheadings—and later, by 1550, also for

3 According to our first syllabus, the lecture was titled "Archaeology of the Screen: Apparatus – TV – Monitor" (Elsaesser and Strauven 2002).

hangings (Online Etymology Dictionary, n.d.).[4] The Dutch *schavot* followed the same etymology and became to stand for corporal and capital punishment. As with the shroud, we enter the Kingdom of the Dead.

My new book project is about scaffolding as an urban phenomenon, referring to the temporary support structures in the field of building construction and renovation. The temporary aspect of these constructions without declared authorship is at the core of the recent book ~~*Contemporary Architecture*~~ by KOSMOS Architects: "Entering into a short-term relationship with the context, this type of construction manifests itself as an event, an intervention" (2025, 37). From construction to intervention, from permanence to transience, from architecture to activism: these are some of shifts in this urban practice that interest me. There will be intersections with so-called technical architecture, civil and mechanical engineering, and urbanism for a discussion of the materials used—from the tubes and bridges (grid) to the various types of debris netting (screen)—as well as policymaking related to cultural heritage, urban design, advertising, public safety, and so forth. At the same time, I am aware that the technique of scaffolding has found applications, metaphorical or otherwise, in fields as diverse as educational psychology and biomedical engineering. Although my focus remains on literal scaffolding, these other applications warrant brief attention here, as their underlying theories reveal how scaffolding has come to signify broader systems of support.

The scaffolding metaphor in teaching and learning finds its origin in Russian psychology, more particularly in Lev Vygotsky's zone of proximal development (ZPD), a notion introduced in early 1930s. According to Vygotsky, the ZPD bridges the gap between current and potential ability; that is, "between *the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration of more capable peers*" (1978, 86). In other words, within the ZPD, children learn new skills thanks to the temporary support provided by adults or more knowledgeable peers. It has been suggested that Vygotsky's learning model closely resembles the scaffolding technique used in ancient Roman engineering to construct arches, which could not stand on their own until "the final stone [was] put in"

4 Here it is interesting to note that Louis Malle's *Ascenseur pour l'échafaud* (1958) was translated as *Lift to the Scaffold* in the UK and as *Elevator to the Gallows* in the US. Geoffrey Nowell-Smith opted for the British title rather than the American one, because he felt the former was more accurate: "in France criminals are (or were) executed by guillotine, not hanged on gallows" (2013, ix). Mark de Valk, on the other hand, proposes to think of the cinema screen as "a modern-day 'public scaffold'" in line with Michel Foucault's notion of the scaffold, "where the body is ritually laid bare to the force of the sovereign" (De Valk 2016, 3). The scaffold as "punitive spectacle" is at the center of Foucault's *Surveiller et punir: Naissance de la prison* (1975; translated in 1977 as *Discipline and Punish: The Birth of the Prison*); the second chapter, originally titled "L'éclat des supplices" (literally meaning "the radiance of the tortures"), has been successfully translated in English as "The Spectacle of the Scaffold" (Foucault 1995, 32–69).

(Shvarts and Bakker 2019, 15).[5] In cognitive studies, without going into detail, the scaffolded mind hypothesis has led to new ways of understanding human action, neuroplasticity and cognitive aging, as well as mental disorders (Goh and Park 2009; Sterelny 2010; Varga 2025), while in the biomedical engineering discipline of tissue engineering, scaffold refers to an extracellular matrix, a three-dimensional structure (or texture), that serves as a temporary support for cells to grow and generate new tissue-like structures (Hashemi and Soleimani 2011; Sultana 2018).

From developing new skills under guidance to using 3D medical fabrics for tissue engineering, where does scaffolding as a feminist practice fit in? Is it about being the more (or rather differently) knowledgeable other? Or is it about changing the patriarchal structure of our scaffolded society? As already mentioned, I am interested in scaffolding as a literal (and material) practice in the field of construction, whereby a supporting structure is erected around a building and a debris net is put in front of its façade. The net functions as a protective layer, a filter, a separation between inside and outside. It is a double-face surface that can be viewed from both sides. If we think of textile in its original meaning of weaving, scaffolds provide a grid similar to the loom with its warp and weft. It is a huge frame with a public screen, a surface for display. And it is precisely in this space that feminist/activist artists can intervene to criticize (or reverse) the gendered division between the public sphere with its male protagonism and the domestic sphere with its hidden female labor. Before entering such a discussion about scaffolding as "in-between-ness," which should be understood not only spatially (inside/outside) but also temporally (transience/permanence), let us first take a closer look at the architectural definition of scaffolding and various types of construction screens, including abovementioned fake façades.

3. Architectural Scaffolds as Grids

With regard to the architectural apparatus, I suggest departing from the Italian word for scaffolding *impalcatura*, as it leads back—ultimately, through its definitional and disciplinary layers—to one of the main architectural thinkers of the Renaissance, Leon Battista Alberti. Treccani's online dictionary distinguishes three semantic fields for the term: construction, arboriculture, and zoology. The first definition, that which belongs to the field of construction, is rather extensive. It first describes the function of scaffolding to support both

5 Other education scholars, on the other hand, have pointed out the difference with scaffolding in the building profession: "Contrary to the notion of scaffolding in the field of construction, where the same structures can be used in constructing similar buildings, scaffolding in education and other related fields, with its link to sociocultural theory, is not a rigid structure but a fluid support finely tuned to the child's progress, with the purpose of helping the child become self-regulated" (Gönülal and Loewen 2018, 2).

workers and materials as well as to "provide access to all points of work"; then, it nicely points out the grid structure, made up of "vertical elements" that are connected about every two or three meters with "horizontal beams" on which "smaller beams" are rested, the technical terms for each of these elements being given; and, lastly, it provides information on how these elements are fixed together, that is, with "rope ties" in the case of wooden scaffolds and with "scaffolding joints" (*giunti snodati*) for today's most common scaffolds which are made of steel (Treccani, n.d., my translation).[6]

While Treccani's definition continues with other uses of the term as support system, this first part is already telling. It clearly points to a Western take on the history of scaffolding, given the long-standing use of bamboo in East Asia, which is still widely adopted in Hong Kong.[7] Moreover, the application of scaffolding joints is a direct reference to the so-called tube-joint (*tubo-giunto*) patented in the mid-1930s by Italian businessman Ferdinando Innocenti, a system that became successful during fascism and is still in use today (Giannetti 2017, 2022). Most remarkably, Treccani makes no mention of the debris netting or construction screen. The Italian term *impalcatura* refers to the supporting structure, the unclothed framing, the grid without screen. Treccani also provides another commonly used term for scaffolding: *ponteggio*, derived from *ponte*, meaning bridge, thus evoking the bridge-like effect of the NYC sidewalk sheds. The term *impalcatura*, on the other hand, contains the term *palco*, meaning platform, plank floor, or stage.

The notion of scaffolding as support for workers and materials rather than for the building itself *seems* to go back to Alberti's treatise *De re aedificatoria* ("On Architecture," 1452). According to Zanichelli's *Il nuovo etimologico*, the term *impalcatura* appeared in the sixteenth-century Italian translation of *De re aedificatoria* by Cosimo Bartoli in the meaning of "temporary worksite structure made of poles or tubes and wooden platforms, to support workers and materials" (Cortelazzo and Zolli 1999, 730; my translation). However, there are other passages in Alberti describing scaffolding as a supporting structure under a vaulted

6 The original reads as follows: "s.f. [der. di *impalcare*] – 1. a. "Nelle costruzioni, struttura provvisoria (detta anche *ponteggio*) destinata a sostenere gli operai e i materiali occorrenti per l'esecuzione di un'opera, nonché a dare accesso a tutti i punti di lavoro; è generalmente costituita da elementi verticali (*antenne*, *candele*), collegati ogni due o tre metri circa con travi orizzontali (*traversoni* o *correnti*) sulle quali vengono poggiate travi più piccole (*travicelli* o *traversi*) a sostegno di un tavolato continuo, praticabile. Nel tipo in legno le giunture erano fissate con legature in corda; l'attuale tipo metallico è costituito da tubi di acciaio riuniti fra loro con giunti snodati, o da telai prefabbricati accoppiabili con innesti" (Treccani, n.d.).

7 Plans to phase out bamboo for metal scaffolding in Hong Kong began in the spring of 2025, well before the scaffolding fire at the Wang Fuk Court apartment complex in late November 2025. However, the real culprit of this terrible fire was not the bamboo but the screen; after a summer typhoon, at least part of the netting was "replaced with cheaper material that did not meet fire-safety standards" (Stevenson et al. 2025).

roof under construction, to be removed once the vault is "compleated [*sic*] and settled," similar to the arches built in Roman times (Alberti 1755, 151). In fact, Alberti's architectural theory was heavily inspired by Roman architect and engineer Vitruvius's *De Architectura* ("On Architecture," circa 30–20 BCE), where an early description of "construction machinery" can be found (Marconi 2021, 62).

For now, I propose to focus on the Western notion of the architectural scaffold as a grid, as a structure made up by vertical elements connected by horizontal beams, as aptly described by the Treccani dictionary. The notion of grid evokes a passage in Alberti's other famous treatise, *De pictura* ("On Painting", 1435), where he introduces the metaphor of the "open window" (*aperta finestra*) as well as the technique of the intersection or "veil" (*velum* in Latin, *velo* in Italian), which is described as follows: "I take a Veil made of the finest Threads, but not close woven; the Colour matters not; This I divide into what Number of Squares I think proper by some bigger Threads parallel to each other, stretching it upon a Frame, which I place between my Eye and the Object, that the visual Pyramid may pass to it through the Veil" (Alberti 1755, 254). Whereas Anne Friedberg, in her study on windows, insists on the significance of the veil's frame with its inset quadrants, which she defines as "a device to 'map' the three-dimensional world onto a two-dimensional plane" (2006, 38), my interest lies in the threads, their variable thickness, and their intersecting lines forming the grid pattern of the weave. Alberti's veil is a piece of cloth!

Indeed, according to Bernhard Siegert, Alberti's scientific approach was "firmly rooted in the textile paradigm," a framing which reflects the aesthetic and material logics of the early fifteenth century when tapestries were commonly considered "to have higher value than pictures" (Siegert 2015, 99). Alberti also resorted to textile for definitions of Euclidean geometry, but what matters most here is that his woven veil is part of an imaging theory; it is a grid that—as Siegert puts it— "effectively merges representation and operation" (98). While Alberti's window "serves as metaphor for the mathematical construction of paintings, the veil is a medium for their technical construction" (98). Siegert's discussion of the grid as a cultural technique moves from imaging theory to cartography and topography, to urban planning and cell-based architecture (such as Le Corbusier's groundbreaking modular design)—a discussion in which the control of space is central.

If Siegert's grid is about "ruling spaces," about locating things and turning even humans into retrievable objects, and about "address[ing] and symbolically manipulat[ing] things that have been transformed into data" (98), it is important to highlight how such a media structure is not neutral. Grids can be exploited to create gender-based divisions or to determine who has power over whom, as exemplified by the urban planning of early modern colonial governmentality (Siegert 2015, 102–111). Scaffolds may also be compared to doors as cultural techniques, as they operate as architectural media and emphasize

the "primordial difference of architecture—that between inside and outside" (Siegert 2015, 193). This tension between inside and outside is again not neutral, as it can be used for strategies of inclusion and exclusion.

Unlike the sidewalk sheds in NYC, which form a passageway to ensure a steady flow of pedestrians beneath the ongoing construction work, the European style scaffolding usually covers the entire façade, from street level to the top floor, completely separating pedestrians from the building.[8] This creates a distance, or separation, between building and street, between inside and outside, which is occupied by the supporting system of the scaffolds—an in-between space that is missing, for example, in the installations of environmental artists Christo and Jeanne-Claude.[9] It is indeed important to distinguish between enveloping a building and scaffolding a building. We should think of scaffolding as an operation that combines techniques of supporting and protecting, framing and screening.

Given the frame structure onto which a screen is stretched, I see a connection not only with Alberti's veil but also with the basic—that is, material—apparatus of cinema. With cinema's return to 3D in the early 2010s, after the release of James Cameron's *Avatar* (2009), Elsaesser suggested there was an internal logic at stake which consisted in cinema's "tendency to self-abolish its apparatic scaffolding and peculiar geometry of representation," referring to the impulse to eliminate the frame as delineation of our field of vision (2013, 229). In those years, digitally shot movies were still transferred to film for projection, so the frame was the material boundary of the image space both on the filmstrip (photographic image) and on the film screen (projected image).[10] We could think of the analog filmstrip as a scaffolding holding individually framed images together; the film frame being a material and temporal unit, a measurement of a projection speed (24fps), which is at the basis of quantification studies of shot lengths, such as Yuri Tsivian's Cinemetrics (2005) and Barbara Flueckiger's Timeline of Historical Film Colors (2012).

The scaffolding of cinema's apparatus is therefore not to be taken just metaphorically but also very literally. Furthermore, scaffolds are used to build film

8 Although NYC's sheds keep the shops accessible, the main complaints come from retailers, because the scaffolding obstructs the view of their shop windows and the use of cross braces makes it difficult to pass through from the street side. New scaffolding manufacturers like Urban Umbrella and Shed Innovations are attempting to overcome these problems (Baird-Remba 2023).

9 An exception to the rule was their installation in Central Park in New York City, *The Gates* (2005), which consisted of 7,503 saffron-hued fabrics on simple frames, weaving along 23 miles of the park. These "gates" were scaffolds with loose screens that covered nothing but air and fluttered in the wind (Christo and Jeanne-Claude n.d.).

10 Technically speaking, much of the visual effects and digital processing performed by so-called render farms consists of rendering single frames, so the frame as a material unit still exists in (full) digital cinema.

sets and support platforms for film production. In the late 1920s and early 1930s, tubular metal scaffolding was being introduced to replace wooden frameworks in British film studios and later also in Hollywood. It was cost-effective because of its durability and reusability, but also, importantly, because it was fireproof. Moreover, its modular principle made it particularly flexible, as it could be "used to quickly and easily construct a lighting rig or camera crane to match the specific needs of an individual production, sequence or shot" and "easily disassembled when not in use, freeing up space on often cramped studio floors" (Farmer 2021). Scaffolding in film studios is efficient not only for carrying technical equipment but also for attaching décor pieces, which calls to mind the use of painted flats in early cinema (Lant 1995), the "Strada Novissima" façades built by Cinecittá's set designers for the 1980 Venice Biennale (Celant 1980), or even the legend of the Potemkin villages, allegedly created to impress Catherine the Great (Manovich 1998).

4. Screen – Shroud – Canvas – Cocoon

In material terms, there is a continuity between early cinema's painted flats used as backdrops and film screens mounted on supporting frames. Such a structure, which usually remains hidden from sight, is exposed by Orson Welles in an emblematic scene shot in Mexico City for his unfinished epic film, *Don Quixote* (1957–1969). The scene takes place in a movie palace, where Don Quixote rushes to the aid of a woman in danger on screen and begins to fight the projection with his sword, shredding the screen and revealing the wooden structure supporting it. The double function of framing and supporting is also thematized in a 1906 film by Georges Méliès that plays with the popular theme of living posters: *Les Affiches en goguette* (*The Hilarious Posters*). Here the scaffolding holds a multi-frame billboard with painted figures that is turned quite literally into a three-dimensional cabinet with living curiosities—ranging from a cook and a liquor seller to several coquettes, who are put on display and meanwhile play pranks from above on a passerby and a group of policemen on the street. Then, the film moves back from live action to painted figures on a fully restored billboard, which eventually falls on top of the policemen and tears open.

A torn screen, revealing the supporting framework of scaffolding, is something that catches my attention on the street. Over the years, I have photographed many scaffoldings with ripped nets or construction screens with openings, that show the gap between building and street, between façade and passerby (Fig. 2). By making this in-between-ness visible, they bring us to the original meaning of the term "screen" as something that physically stands in the middle. Rather than a surface, the screen is an interface, a boundary between two objects or realms; it is something that separates or creates barriers, like the fire screen (which is, supposedly, the original meaning of the term).

Figure 2. Scaffolding with a torn screen, Montecatini Terme, Italy, 2019. From author's personal collection.

The construction screen, which covers the skeletal structure of the scaffolds, is meant to protect passersby from dust or falling rocks. It also functions as a screen of concealment, as it hides the façade under construction or renovation from our view—similar to other screens, such as the hand-held lady's fan and the folding screen or room divider, both of which are examples of the screen as a material layer for image display. This finally leads to the definition of the screen as a surface; that is, a flat, often rectangular area for intercepting shadows of objects (as used in the field of mathematics) and light images (which began with the tradition of the magic lantern and then the cinema). This is what Elsaesser considered the anomalous/ambiguous screen of cinema, the screen as projection screen, which in the early days of the motion pictures was referred to by the two other English terms: "curtain" and "sheet" (Paul 2005; Strauven 2021, 175–78).

If we can think of scaffolding as a form of cinema (in the sense of basic apparatus), I suggest adding at least two other terms: "shroud" and "canvas." Here I want to briefly come back to the Holy Shroud of Turin, known

in French as Saint-Suaire and in Italian as Sacra Sindone.[11] Without going into the controversies surrounding the "technical" origins of the shroud's faint image—from chemical painting to medieval photography to UV radiation—I am interested in the image as imprint, or better as material surface through which a picture appears or manifests itself. As for the scaffolded buildings, I connect the notion of imprint to the phenomenon of fake façades printed on the temporary construction screens. Sometimes—either by design or from long exposure to the sun—these ersatz façades seem to fade away, as if they were becoming an ephemeral trace, a photographic impression left on the shroud.

I photographed many fake façade screens in Italy, where there seem to be strict rules imposed by the Soprintendenza dei Beni Culturali (Superintendence of Cultural Heritage) not only about the (photographic) imprints of the architectural façades that are hidden but also about the percentage of the total scaffolding that can be deployed for commercial purposes, which is set at max. 30%.[12] Many shrouds come with a reserved blank area to be occupied by billboards, which can easily be changed according to the speed of marketing campaigns, while the building remains under renovation. As fashion is a big player in these advertising campaigns, the nets function as surfaces on which the bodies of mostly female fashion models are displayed, reviving—after fifty years—Laura Mulvey's "to-be-looked-at-ness" (1975) and at the same time hiding the male workers behind the screen, which leads to an interesting renewal and reversal of the gendered tension between visibility and invisibility (Fig. 3). The putting-on-display effect is even stronger at night, when the screens are illuminated, literally turning the billboard into a spectacle, as the advertising areas are not only framed but also provided by spotlights (Fig. 4). My personal favorites are a subgroup of the fake façades where the reserved areas for ad placement are still empty. Like movie screens, these white rectangles seem to be waiting for projection (Fig. 5).

11 It is interesting to note that the Italian translation of David Cronenberg's latest film, *The Shrouds* (2024), avoided the term *sindone* and instead opted for the more metaphorical *segreti sepolti* (meaning "buried secrets"). Cronenberg's film features a sci-fi shroud technology that is connected to coffins and tombstones. As the director disclosed at the 62nd New York Film Festival, the idea for the film started "with the box" and the inability to separate oneself from the deceased loved one (Cronenberg 2024).

12 This was regulated by the Ministero per i Beni e le Attività Culturali per il Turismo (MIBACT) (Ministry of Cultural Heritage and Activities for Tourism) in December 2020.

Figure 3. Fake façade with fashion advertisement, Rome, Italy, 2003.
From author's personal collection.

Figure 4. Fake façade with illuminated advertising panels at night, Rome, Italy, 2003. From author's personal collection.

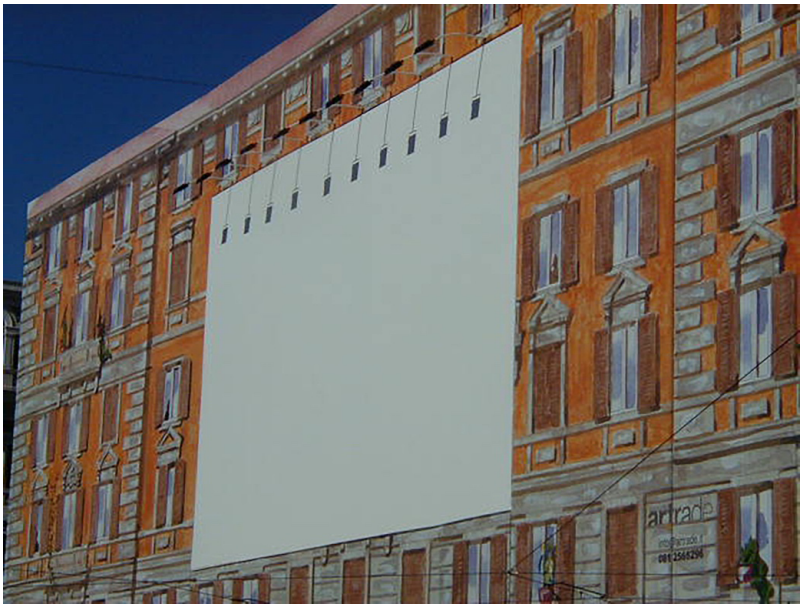

Figure 5. Fake façade with a white screen, Rome, Italy, 2003. From author's personal collection.

Urban façades can also be transformed into spectacular media screens by means of LED-lit windows or various forms of video mapping. Although equally catching my eye and triggering my photographic impulse, these urban screens would constitute a separate chapter. They belong to another genealogy, as they turn the architectural façade directly, immediately, into a projection screen, that is, without the in-between-ness of a (textile-based) screen. For this reason, the term "canvas" may be a more appropriate term to use in relation to screens on scaffolds, as it emphasizes their materiality. Today's scaffolding screens are primarily made of high-density poly material, such as polyethylene (HDPE) or polypropylene (PP). They are usually knitted rather than woven. Whereas the early film screen was made of calico, tightly woven cotton, the construction screen is a mesh. It is a screen with a distinct raster effect, comparable to the surface of video that Laura Marks described as "a loosely woven fabric" in relation to Alois Riegl's notion of "haptic representation" (Marks 2000, 168). This raster effect is reinforced when a video image is shown on a TV monitor, to which I will come back when discussing Bajević's video work.

The textile/texture-based notion of haptics stands in stark contrast to the optics of high-resolution photography as employed by Peter Steinhauer in his book on Hong Kong scaffolding, titled *Cocoons* (2018). In her foreword to Steinhauer's book, Linda Benedict Jones narrates her experience of viewing his photographs for the first time at a curatorial review session in Paris and how she was "perplexed and enchanted […] by the canvas sprawled before [her]." And she adds: "The word canvas seems incorrect in a discussion of photographs but it conjures up the sensation I had at that first viewing. The images that Steinhauer selected to present that day were splashes of primary colors more akin to abstract paintings than to documentary photographs. Perhaps that's why they moved me in a way that photographs rarely do" (Jones 2018, xii).

Steinhauer is an American photographer who lived for more than a decade in Southeast Asia, first in Vietnam and Singapore, and then in Hong Kong, where his project of photographing "wrapped buildings" took fully shape from 2007 to 2015—an idea that was triggered in March 1994 when he first visited the city. After initially mistaking a large building "encased in bamboo scaffolding and being covered in some sort of yellow material" for an installation by Christo and Jeanne-Claude, he realized the city was full of them (Steinhauer 2018, vi).

In a certain sense, Steinhauer follows the path of nineteenth-century Scottish photographer John Thomson, who traveled to Southeast Asia in the early 1860s and settled in Hong Kong in 1868 where he started photographing life on the street. Among Thomson's photographs are a couple of images of bamboo scaffolding—just the skeleton without a screen—of a "European style building under renovation" in Shantou, Guangdong (Jones 2018, xiii). In contrast to these early black-and-white prints, Steinhauer's photography is entirely about the bright monochromatism of the canvases: "primary colors at their

finest—vibrant greens, blues, yellows—like a new box of Crayola crayons" (Jones 2018, xiv). This was in fact a turning point in Steinhauer's own career, as he had worked for many years only in black and white. But in Hong Kong, he understood the need to capture the colorfulness of the canvases and to act quickly, whenever a new scaffolding was being erected, because the air pollution would soon make the fabrics look "dingy" (Jones 2018, xiv). Steinhauer clearly attached great importance to a clean image of the scaffolding screens, rendered by means of high-resolution (or "rich") photography. Another important decision that adds to the aesthetic grandeur of his "cocoons" was to photograph the buildings from high vantage points, climbing up steep streets or accessing rooftops or balconies across the construction site.

This high perspective (and high art) approach contrasts sharply with my habit of photographing wrapped buildings from below, from street level. I took my first scaffold pictures during a short stay in Rome, in 2003, with a cheap digital point-and-shoot camera. The low-res images function here not only as historical traces but also as anti-hierarchical "poor images" (Steyerl 2008). They are, so to speak, my feminist/activist response to the rich and perfect images of Steinhauer's hi-res photographic project. It just so happens that, like Steinhauer, I also moved to Hong Kong in 2007. My scaffolding collection contains several pictures taken in Southeast and East Asia, from the Royal Palace of Bangkok (Thailand) and the Forbidden City of Beijing (China) to the IMAX Dome of the Hong Kong Space Museum (Fig. 6). The scaffolding screens in my pictures are often dull or faded, or at least not as vibrant as in Steinhauer's work. I am not specifically in search of the "purity" of the monochrome screen, although over the years I have taken some "artistic" photos of buildings wrapped in bright white canvases that act as reinforcing backgrounds for statues or fountains, as if they were part of a scenography. Especially in empty Italian squares, this totally unexpected/involuntary staging can evoke the atmosphere of Giorgio De Chirico's metaphysical paintings (Fig. 7).

I am just as interested in the ugly examples, the dirty screens, the tacky fake façades, the advertisement plague ruining the potential aesthetic dimension of scaffolding. Regarding the metaphor of the cocoon, which deceptively suggests a feeling of coziness or comfort, Steinhauer relates it to his personal experience of living for seven months in a wrapped building. "Cocooned" in green material, Steinhauer describes it as follows: "It felt like we were *actually* living inside of a cocoon, as everything in our apartment took on a dark shade of green. We would see men working outside our windows, clinging to the bamboo scaffolding, expert hands tying two huge bamboo poles together within minutes […]. I imagined it happening to a caterpillar when it goes through its transformation; that is, an army of small men working their magic to reveal a more beautiful version of itself" (2018, vii).

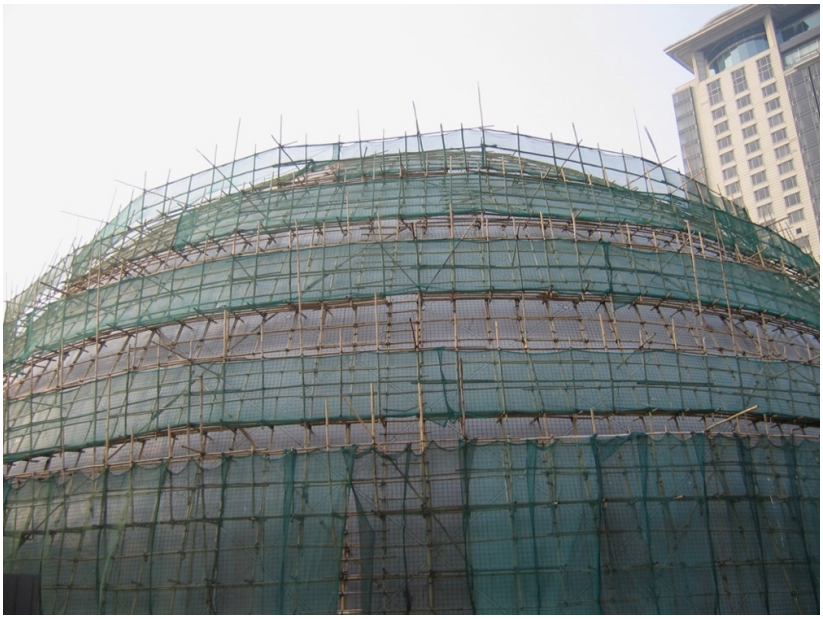

Figure 6. IMAX Dome of the Hong Kong Space Museum, Tsim Sha Tsui, Hong Kong, 2007. From author's personal collection.

Figure 7. Scenographic effect of scaffolding on an empty square, Torino, Italy, 2022. From author's personal collection.

My personal experience of living in a scaffolded building is very different: it feels like being in a huge (and dusty) cage. The image of the cocoon romanticizes the claustrophobic and depressive conditions of living in a wrapped building, especially when the temporary scaffolding is everlasting. The notion of wrapping itself may even be too fancy, as it suggests that these buildings are "gigantic gift-wrapped packages" for residents, which of course they are not (Jones 2018, xiv). What should be emphasized instead is the monstrosity of the cocoon, supposedly resulting from the (imagined) work of an enormous insect larva. The scaffolding framework can also be seen as a giant insect clinging to the building with its metal tube legs, which emphasizes the feeling of captivity from within.

The scaffolding mesh, on the other hand, would belong to the genealogy of "protective screens" (Casetti 2023), as it combines the function of an umbrella—protecting against things falling out of the sky—with that of a filter—stopping large debris but not fine dust, while allowing light and air to pass through. But are scaffolding screens really protecting people? In big cities like New York, scaffolding blurs the boundaries between the inside and the outside, as the sheds provide makeshift shelters for the homeless. Again, as with the concept of the cocoon, we must be careful not to romanticize (or patronize) this idea of shelter, as it raises issues of hygiene and safety, social tension and police intervention. Yet these "alternative shelters" (Aneja 2020) should also be studied as "counter-infrastructures to formal social welfare systems" (Kriger 2025), which is especially relevant in NYC where the "Right to Shelter"—a longstanding legal mandate requiring the city to provide a bed for every person who might need one—has functionally ended in December 2023 (Hogan 2023). This brings into focus the ethical, social, and human agenda of scaffolding, which is linked to the tension between inside and outside, private and public, domesticity and professional practices. This is the space of in-between-ness where feminist/activist artists can operate.

5. In-Between-Ness: Maja Bajević as Case Study

The video performances of Maja Bajević have been defined by Janis Jefferies as a form of "social laboratory" (2007, 165). I came across Bajević's video *Women at Work – Under Construction* (1999) twenty years after I took my first scaffold photos in Rome. I saw this single-channel video (total running time: 11' 48") at the art gallery Kaufmann Repetto in NYC as part of a textile exhibition titled *re-materialized: the stuff that matters* (January 13–February 18, 2023). Bajević's video, which was playing on a loop on an old TV monitor, literally hypnotized me: here scaffolding was turned into a public performance, into a collaborative artwork, using a construction screen as a canvas for embroidery. It involved women refugees from Sarajevo who were invited to take a seat on

the scaffolding and embroider their own colorful compositions within smaller frames of the huge scaffolding frame.

The video is part of the tryptic *Women at Work*, which makes visible "invisible" domestic activities through public performances (documented by single-channel videos). *Under Construction* was followed by *The Observers*, focused on the activity of needlework against the setting of a French castle in conjunction with the reenactment of a Frans Hals painting, *Regentesses of the Old Men's Almshouse* (ca. 1664). The third and last installment, *Washing up*, takes place in the public hammam Çemberlitaş in Istanbul and consists of washing cloths inscribed with optimistic Tito slogans in dirty water, for five days, two hours a day. The cyclical dimension of these domestic activities is key: it is about repetition, about healing through repetition, and about resistance against oblivion and anonymity.

The scaffolding performance also lasted five days, continuing partially during the nighttime, and involved five women refugees: Fazila Efendić, Zlatija Efendić, Amira Tihić, Hatidža Verlasević, and Munira Mandzić. Fazila and Zlatija were reinvited for the second and the third installment. These women were not only named but also paid for their contribution to the art performances, becoming participatory agents of Bajević's "politics of domesticity" (Pejić 2007, 70). This powerfully counters the collective invisibility of refugees produced in ex-Yugoslavia. As pointed out by Bojana Pejić: "During the Bosnian war, the anonymity of women refugees, regardless of their ethnic group, was steadily reinforced by the mass media, foreign television stations in particular. The refugees were televised as an unidentified mass, as a crowd or a suffering *Volk*" (2007, 75). As a non-Muslim, Bajević invited these five Muslim women to mourn in public over their lost husband, brother or son, wearing white headscarves, "following the practices of Muslim culture in which white is the color of mourning" (Pejić 2007, 75).

The building under renovation is the National Gallery of Bosnia and Herzegovina, located in the center of Sarajevo. It houses institutional art with a capital A, while the women on the scaffolding embroider folkloristic figures and motifs (Fig. 8). This tension between the heritage (inside) and the craft (outside) is intentional. It is meant to bring about a productive dialogue and the beginning of a new history, as the artist writes in her book tellingly titled … *and other stories*: "I wanted to make a synthesis of two histories; one that symbolises the interior of the National Gallery, and a new one—the reality of my country marked by war and refugees. Aside from this, I made a connection between the needlework (outside) as part of national folklore and the art collections (heritage) contained in the National Gallery... a new history began to speak in traditional tongue" (Bajević 2002, 5).

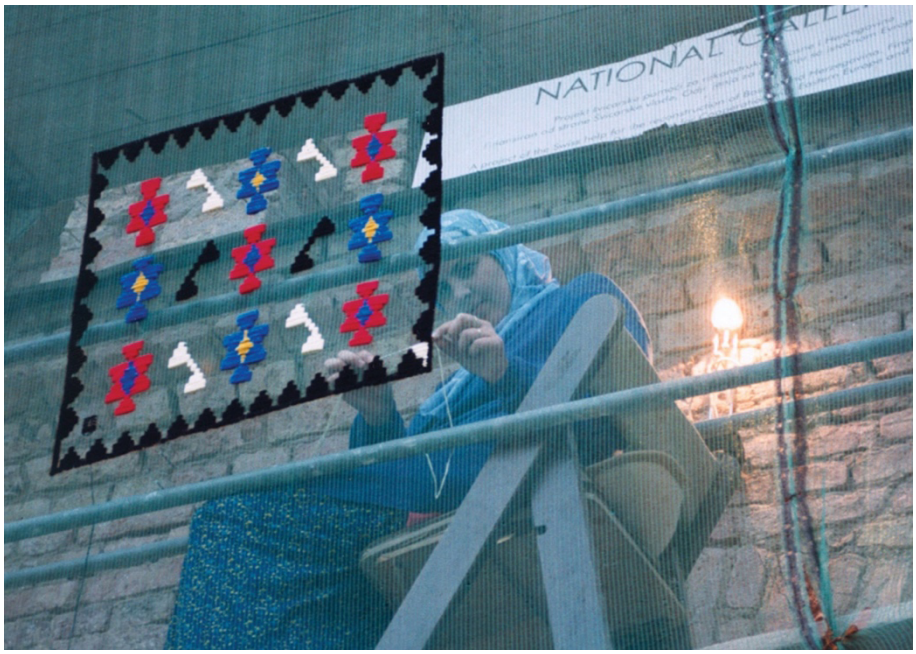

Figure 8. Maja Bajević, *Women at Work – Under Construction*, Sarajevo, Bosnia and Herzegovina, 1999. Five-day performance on the scaffolding of the National Gallery of Bosnia and Herzegovina. Photo documentation: Haris Memija and Dejan Vekić.

This new dialectics between inside and outside somehow reverses the traditionally opposed gendered spaces: the public/visible *menspace* vs. the domestic/invisible *womenspace*. Although it resembles the reversal of visibility and invisibility discussed above in relation to fashion advertising on scaffolding screens, here the female body is not just put on display but actively performs labor. Yet this labor is domestic and, implicitly, meaningless. Bajević's video also documents some male activity on the scaffolding. They are construction workers, whose labor is—from the patriarchal perspective—much more meaningful. As Pejić puts is: "*Under Construction* is an artistic event wherein different aspects of women's social invisibility are layered. Here, women's chosen work is accomplished in public and, in addition, such a 'superfluous' and apparently purposeless activity as decorating the façade is contrasted with purposeful male physical labor, namely, the male workers' role of restoring the 'essence' of the building, soon to serve again its meaningful, public function as the national museum for visual arts" (2007, 74).

As already pointed out, Bajević's "politics of domesticity" is not only about gender. Her tryptic as a whole is about transforming *nonspaces*—a façade, a castle, a bathhouse—into ritual places where mourning can be done with dignity, where loss of identity is restored, and where memory can become an active

practice. Jefferies proposes the notion of "in-between peripherality" (borrowed from Steven Tötösy de Zepetnek) to describe Bajević's work as being both "peripheral" and "in-between"—that is, in between her own national culture and the primacy of major Western cultures by which "Eastern Europe" was influenced. Bajević somehow places this in-between-ness at the center of her work, both literally and metaphorically. Jefferies writes: "Her performances, her life writing and use of textile materials bring into play the tensions of what is possible and feasible to express in her configurations of 'everyday' life, both on the periphery and at the centre of contemporary art and its relationship to politics. It is a tangle of symbolic geographies and interwoven histories" (2007, 166).

There are moments where Bajević's video takes us to the other side of the construction screen, to the literal in-between space, the gap between street and building, between outside and inside, but also between two woven structures, that of the net and that of the bricks. It is in this narrow space that creativity is happening. At the same time, these moments reverse the circuit of CCTV: here, the women are not being surveilled but are surveilling themselves, they are looking—via a pixel/raster screen—down on the passersby. Yet their screen is also the material surface for a new image, which is colorful, embroidered, and framed. The transparency of the debris netting nicely accentuates the grid structure of the scaffolds, which is thematized—in a *mise en abyme*—by the individual embroidery frames. Moreover, the debris netting creates a pixelated effect on the face of the women when taken in close-up or medium close-up from the other side, that is, the outside. This raster effect is reinforced on the TV monitor of the video installation, the video image being an instable image that derives from a signal, occurring in the relay between source and screen. It is a strong instance of "video haptics" (Marks 1998). The video image emphasizes process over perfection, sensoriality over representation; it offers a counter-narrative of intimacy and fragmentation against the colonial/capitalist practices of visual clarity; the layers of the grid obscuring our vision but also creating the sensation of both closeness and distance.

In Bajević's video there is a multiple framing at stake: the framing of the scaffolding, the framing of the embroidery patterns, and the framing of the women refugees. In terms of (technical) image production, the technique of embroidery is displaced on a construction screen, which is becoming a shroud for the building, but maybe also for women themselves, because—even if they are transformed from invisible housewives to visible agents in the public, from refugees to paid performers—they remain veiled/screened, located at the other side of the circuit. When working at night, their handmade images are lit from behind, resembling shadow figures of early cinema and the shadow puppet theater. The night shots of *Women at Work – Under Construction* turn into spectacle both the cutout figures and the women at work, the scaffolding (*impalcatura*)

becoming their stage (*palco*).[13] Is Bajević intentionally playing with voyeurism here? Or is the Sarajevo-born artist inviting us to connect her feminist installation with the color-lit brothels at night and the conditions of sex workers, creating awareness for another group of marginalized women?

6. Coda

Other feminist/activist projects involving scaffolding are to be further explored and discussed along the same lines of in-between-ness or reversal of hierarchies in the public sphere. For instance, there is the work of German-Italian artist Monica Bonvicini who makes large-scale installations with galvanized steel pipes to occupy the inside of the museum space as a critique of the male-dominated world of (outside) architecture. Most famous is the scaffolding with swings in black leather, *Never Again* (2005), which explores the links between sexuality and power. More subtle is the collective performance staged by Sardinian artist Maria Lai in her birthplace Ulassai, titled *Legarsi alla Montagna* (*Tying Oneself to the Mountain*, 1981), which consisted in knotting together torn pieces of fabric into a very long thread to attach an old village to the surrounding mountains. By uniting architecture and nature as well as oral history and video art into an enormous scaffolding structure, Lai's project focused on a communal experience of inclusion. Another "displacement" of scaffolding art is the gigantic work of needlework, *Re-Enchanting the World* (2022), by Polish-Romani artist Małgorzata Mirga-Tas. Revisiting the famous calendar cycle of frescoes from Palazzo Schifanoia in Ferrara, Mirga-Tas's "re-enchanting" installation aims at "disenchanting" stereotypical narratives about the Roma by means of huge textile panels attached to the wall from ceiling to ground.

Bajević's *Women at Work – Under Construction* finds its most direct resonance in the cross-stitched pink slogans of the feminist art project SOLANGE / AS LONG AS. This collective drapes white nets over buildings in scaffolding, cross-stitched with phrases such as "As long as you rely on patriarchy, I will be a feminist" and "As long as diversity is not the state of the heart, I will be a feminist," in order to promote a more inclusive society. Between February 2018 and June 2025, they have installed thirty-three nets (with thirty-three different AS LONG AS slogans) in various European countries, first in Austria, homeland of the founding artist Katharina Cibulka, and then across the continent. So far, they also put up two scaffolding installations outside Europe: one in Washington DC at the National Museum of Women in the Arts (2022–23) and one in Morocco at the Rabat Biennale (2019–20). The SOLANGE collective

13 After the public performance, the embroidery frames were literally cut out and ended up inside the National Gallery, on makeshift scaffoldings, for a solo exhibition curated by Maja Bobar and Asja Mandić and titled *Maja Bajević, Home Again* (2006).

insists that feminism is not a "women's issue," but an issue that affects the whole of society for the purpose of a more human and humane community. As they declare on their website: "It is a subject that […] concerns every person, no matter what gender. Ultimately, we all profit from gender equity and the deconstruction of rigid and outdated gender norms" (Solange The Project, n.d.).

To rephrase one of Cibulka's earliest nets, No. 4, installed at the Academy of Fine Arts Vienna in 2018, "As long as [media archaeology] is a boys' club, I will be a feminist" (Fig. 9). And as long as the patriarchal politics of vision and the gendered separation between the domestic sphere (inside) and the public sphere (outside) are in force, my scaffolding project will be feminist.

Figure 9. Katharina Cibulka, *SOLANGE #4*, Academy of Fine Arts Vienna, Schillerplatz, Austria, 2018. Photo: Bernd Hofbauer.

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ARTCHAE

For a Media Ar(t)chaeology of Telepresence

Much of contemporary media entails forms of telepresence. Interaction and perception across physical distance today underpin both everyday media—such as mobile phones and teleconferencing platforms—and simulation-based media, including immersive and extended realities, which consistently incorporate a live component. ARTCHAE traces the roots of these processes to the electronic arts from the 1960s to the early 1980s—video art, installation art, and sound art—where mediated presence first became a site of experimentation, while simultaneity, embodied interaction, and self-recognition were already challenged. Combining analyses of media artworks by leading international scholars with interviews of prominent artists and curators, ARTCHAE proposes an ar(t)chaeology: a genealogical inquiry into telepresence grounded in the early insights of artists, particularly overlooked women, who explored the ways tele-media reconfigured private and public spaces, the mediation of the Self, and collective participation.

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