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Sound, Ritual, and Presence in the Age of Telematic Dialog: A Polyphonic Conversation Across Distance

by Paulo C. Chagas and Cássia Carrascoza

Introduction

In a time when digital communication often substitutes for presence, and the screen mediates both intimacy and creation, music emerges as a paradoxical force—disembodied and yet deeply embodied, ephemeral and yet enduring. *Sound Imaginations: Telematic Immersion*, our recent collaborative project (Chagas and Carrascoza 2025a; 2025b), explores this paradox by engaging with sound, image, and gesture across space and time.

What does it mean to perform together when togetherness itself is technologically reconstructed? How does electronic sound alter not only the materiality of music but also the very way we perceive, feel, and think through it? Can rituals still emerge in a digital world, and what forms of presence are possible when bodies are no longer co-located?

This account centers on three guiding terms: sound, ritual, and presence. Over four years (2020–2024), we developed a telematic project that revealed new insights into our way of making music and presenting it

to audiences. In this context, sound is the primordial matter of music, experienced in acoustic, electroacoustic, and virtual forms.

In this project, the acoustic sound is produced by Cássia Carrascoza on the flute(s); this sound is captured by microphones, transmitted over the network with JackTrip as uncompressed, low-latency audio, processed electronically by Paulo C. Chagas, and finally re-projected online for the audience. Telematic music does not have a physically present audience nor the immediate feedback typical of traditional live performance. During social isolation, we built a telematic dialogue that became a space for artistic research and intense interaction. As Brazilian musicians, we brought the socializing spirit of our culture into the virtual environment. We involved musicians, technologists, and colleagues in exchanging ideas, holding open rehearsals, performing works by friends, and experimenting with creative processes.

In 2021, we created a project involving undergraduate students from the University of California and USP, marking the start of what would become the *Ensemble Telemático LaFlauta*. Between 2021 and 2024, Carrascoza served as Visiting Scholar at the University of California, Riverside, at Chagas's invitation, par-

ticipating in his remote graduate seminars—an experience that significantly deepened our joint research.

From 2023 to 2025, Carrascoza received support from FAPESP (São Paulo Research Foundation) for the research project *Telematic Music: Connectivity in Virtual Environments*, which equipped the LaFlauta Telematic Studio and supported a series of events, including telematic concerts, an in-person performance at ICMC 2023 (Shenzhen), and solo performances with live-electronics.

In 2024, we presented two *Virtual Studies* and *Mojave* at the international symposium “(Virtual) Presence!? Musical Performances in Hybrid Spaces” in Berlin. We also produced the film *Sound Imaginations: Telematic Immersion*, recorded entirely through telematic means with high audiovisual quality and professional post-production. The film premiered in Riverside in November 2024, concluding this creative cycle of the duo.

Rather than offering a unified thesis, this text unfolds as a polyphonic conversation across distance. We propose five central topics, each taken up in turn from Paulo’s perspective as composer (PC) and from Cássia’s as composer-performer (CC). Speaking from different yet intertwined positions—including the role of composer-videographer—we explore how telematic

music-making opens new avenues for sonic thought, emotional connection, and aesthetic form. Our responses alternate, at times echoing, diverging, or converging in a dialogic structure that reflects the collaborative spirit of the work itself.

Sound and Perception in the Telematic Medium

PC: The electroacoustic paradigm marks a decisive shift in how we perceive and relate to sound, as I argue in *Sound, Truth, and Paradigm* (Chagas 2021). Electronic sound does not merely extend or distort acoustic sound; it transforms our cognitive and perceptual frameworks, detaching sound from its immediate source and introducing new layers of abstraction, mediation, and spatial ambiguity.

The telematic paradigm furthers this transformation by redefining presence and simultaneity. Popularized during the COVID-19 pandemic, telematic performances blurred the boundaries between live and recorded music, revealing how digital mediation alters expectations of real-time experience. In such contexts, the distinction between a synchronous performance and an edited recording often becomes irrelevant, challenging our sensory grasp of “liveness.”

Delays, data compression, and transmission artifacts introduce

temporal and spatial discontinuities that disrupt traditional musical synchrony. This rupture has prompted new compositional strategies that embrace asynchrony as a structural principle. Chris Chafe’s concept of “imaged sound” (Chafe 2021) aptly describes how musicians mentally reconstruct the sonic whole when technological mediation occludes parts of the acoustic field. Telematic music, then, invites a reimagining of simultaneity—not as uniform time, but as a negotiated presence across distributed cognitive fields.

CC: In the interaction between acoustic instruments and digitized sound, a temporal gap arises between the emission of the acoustic sound and its return through monitors or headphones. This creates a perceptual alteration related to time: the resonance time of sound in the physical space is combined with the temporal layer of the digital environment, which may or may not be modulated. In the context of telematic performance, this relationship becomes even more intense: the resonance time in the performer’s physical space coexists with the time of the transmitted and modulated sound in the telematic environment, where audio latency is a constant. The virtual space, therefore, has its own acoustic properties, which

are gradually learned by the performers. As Chafe (2018) affirms, the acoustics of the internet must be understood as a specific medium—just like air or water—capable of shaping the immersive experience of each musician involved in networked performance.

A fundamental aspect of this collaboration—beyond the audio apparatus—was the construction of a home studio dedicated to video transmission. In this space, tools such as chroma key, video camera, computers, and audio and video interfaces were used to configure the virtual stage, which we adopted as the main space for instrumental performance. In this context, the virtual stage demands deep emotional integration that goes beyond the sonic dimension and encompasses the body, image, and presence in performance.

Ritual and the Virtual

PC. Telematic music reshapes the ritualistic dimension of musical performance. Drawing from Byung-Chul Han’s *The Disappearance of Rituals* (Han 2020), rituals are understood as symbolic repetitions that structure time and make the world habitable. In contrast, neoliberal logic displaces these practices with compulsive productivity and data accumulation. Telematic music, by resisting this trend, becomes

a site for reclaiming ritual through mediated presence.

Music historically operates as ritual, shaping collective and individual identity. As Saint Augustine observes in *Confessions* (Augustine n.d.), sound powerfully moves the soul, revealing music's capacity to bind inner experience with outer expression. Jacques Attali's categories of music—from ritual sacrifice to representation, repetition, and composition—help trace this evolution, situating telematic music within a new phase of distributed ritual (Attali 1985).

Building on Vilém Flusser's notion of the "telematic society" (Flusser 2011), I see telematic dialogue not as a passive transmission of content but as a creative partnership between humans and technical apparatuses. Unlike the embodied synchronicity of string quartets, telematic rituals unfold across distances, where liveness is redefined by interaction with machines. In *Sound Imaginations: Audiovisual Immersion*, we explore how gesture, sound, and space generate a shared ritual—one grounded not in physical co-presence but in symbolic and cognitive resonance.

CC: Musical performance can be understood as a form of ritual. As Nicholas M. Hobson and colleagues state, "In rituals, the most ordinary of actions and

gestures become transformed into symbolic expressions, their meaning reinforced each time they are performed" (Hobson et al. 2017, 1).

Concerts, in this sense, may be interpreted as ritual practices involving technical and emotional preparation, the construction of the performer's self-image, and the relationship established with the audience. These are performative cycles in which the repetition of gestures and actions enhances their symbolic significance.

In telematic performance, however, additional layers of gestuality emerge: the interaction with technical devices, the absence of a physically present audience, and, most importantly, the remote connection with other performers. In this context, technology-mediated interaction can assume spiritual and ritualistic dimensions, as Roy Ascott suggests (Ascott 2003), framing the artistic experience as an expanded field of sensitive presence and shared transformation.

Presence and Absence

PC: Katherine Hayles (1999), in *How We Became Posthuman*, proposes a semiotic square contrasting presence and absence with randomness and pattern, challenging the notion of stable human subjectivity (idem, 248).

In the telematic paradigm, this shift is palpable: presence is no longer tethered to physical co-location but emerges through distributed cognition and mediated interaction.

Telematic performance reframes presence not as immediate embodiment but as affective and symbolic connectivity across space. In this sense, absence becomes constitutive of presence—what is not seen or heard is imagined and compensated by mental reconstruction. Hayles' concept of the "cognitive non-conscious" (Hayles 2017) deepens this view, emphasizing how cognition is not limited to conscious thought but arises through hybrid human-machine systems. The performer and listener become nodes in a shared, dynamic field of distributed agency.

This reconfiguration undermines the humanist ideal of autonomous subjectivity and supports a post-human model in which embodiment is plural, mediated, and partial. In telematic performance, co-presence is not diminished—it is reinvented through new temporalities, affective states, and collaborative imagination.

CC: A central aspect of our work concerns the notion of presence in the virtual environment. We constantly see ourselves reflected on the screen: we are, simultaneously, participants and

spectators of ourselves on the virtual stage.

Our visual compositions explore layered images of myself, with which I interacted throughout the execution of the pieces. *Mojave* and *Virtual Studies*, in particular, were visually constructed from a video of an improvisation I performed in the Mojave Desert—a moment of deep integration with the landscape, in which solitude within vastness, together with the visual and sonic elements of the environment, became, for me, a ritual.

This recording was created as part of a collaboration with Chagas' ongoing research on audiovisual immersion and was integrated into that investigative context. Composed of noise, sounds, voice, and bodily performance in the desert, the improvisation—captured using the project's technical equipment (Insta360 camera and Sennheiser Ambeo ambisonic microphone)—became the starting point for the visual and electronic composition of the piece, marking the beginning of our artistic collaboration.

As part of our collaborative research, we also worked on the piece *I Hear You Breathe* (2022) by Paulo C. Chagas. In São Paulo, I created a visual performance recording in which I developed a kind of ritual by painting my face white, transforming it into a mask. I also explored a very lim-

ited physical space to produce images that brought together parts of my body and the bass flute, constructing a dramaturgy of minimal movements and using the camera as a catalyst for proximity with the audience.

Chagas processed the video with TouchDesigner, applying a feedback algorithm that introduced visual delay and generated a new visual narrative. This treatment produced multiple combinations of bass flute and body while exploring different perspectives and amplifying the minimal movements captured in the original recordings.

In the telematic performances of *I Hear You Breathe* by Chagas, the live performance is superimposed onto images of multiplied presence, unfolding layers of time and space through overlays that represent the act of playing the bass flute both in the present and the past. For example, the close-up of the mask's eye produces a vector of meaning that extends beyond its boundary by directing attention toward the audience. This establishes a dialogue between physical presence and absence within the virtual space.

Collaboration and Trust

PC: Telematic music disrupts traditional notions of collaboration, which have historically relied on physical proximity and

hierarchies of authority. In the telematic space, composer and performer must negotiate distance through trust, intuition, and shared vulnerability. This shift decentralizes control and fosters a co-creative ethos in which roles become fluid.

Rather than following the conventional score-to-performance model, telematic collaboration often unfolds in real time, mediated by technological interfaces. The performer becomes an interpretive partner, shaping the work as it emerges. Such interactions challenge the idea of the composer as sovereign and highlight the necessity of openness to contingency, dialogue, and mutual adaptation.

In this context, trust is not only interpersonal but also technological. One must trust that systems will function, that sound will transmit, and that meaning will emerge despite latency, compression, or signal loss. This layered trust enables a unique form of artistic intimacy—one that bridges distance without collapsing it and redefines presence as an ongoing act of negotiation rather than a given state.

CC: The central issue in contemporary collaborative music practices is not necessarily the physical presence of the composer in the same space as the performer, but rather the nature of the collaboration itself. In col-

laborations of a technical nature, physical co-presence is not essential. However, in contexts of collaborative performance—where composer and performer act simultaneously and in an integrated manner, as in our telematic work—elements such as intuition, trust, and vulnerability in relation to technological interfaces become part of the performance dynamic.

In these situations, presence is not confined to the physical body but expands into a relational presence, as proposed by Roy Ascott (2003) in his concept of the telematic embrace, in which the artistic act unfolds within a network of connected consciousnesses, shaped by empathy, openness, and mutual transformation. This idea contributes to the understanding of how the technical environment may also become a space of sensitivity and affect.

Composition, Improvisation, and Co-Creation

PC: In *Noise*, Jacques Attali (1985) critiques music's function as a tool of social control, especially under regimes of repetition. Susan McClary (1985) expands this critique by exposing how musical forms encode gendered power dynamics, often rendering the composer's voice dominant and the performer's role submissive. These critiques resonate in the operatic narrative

of Bluebeard's Castle, where control, secrecy, and silencing operate as metaphors for patriarchal domination.

The telematic paradigm disrupts this power dynamic. With its emphasis on decentralization and co-creation, it challenges the composer's authoritative role and opens space for shared authorship. In our project *Sound Imaginations: Telematic Immersion*, improvisation functions as a dialogic practice that resists domination, foregrounding trust, vulnerability, and mutual listening (Chagas 2025). Rather than following precomposed scripts, performer and composer engage in real-time negotiation, shaping a piece that is contingent, emergent, and inherently plural.

This shift also reflects a broader ethical transformation: from control to collaboration, from authorship to relational presence. Flusser's notion of the apparatus as a site of freedom-in-constraint finds expression here, as improvisation within technological systems becomes a practice of emancipation. In this context, freedom is not pre-given but continuously constructed through the very act of making music together—across bodies, across distances, and beyond the boundaries of traditional musical roles.

CC: In a telematic environment, the creative process between

composer and performer becomes more intertwined than in face-to-face collaboration. Spending time together—especially during the early stages of creation—is essential. The virtual stage is not a given space; it must be imagined, constructed, and ultimately functions as a structural element of the narrative.

In our work this became particularly clear. The visual aspect of the live performance had to merge organically with the pre-recorded videos. In this context, live performance is also a video—a layered construction involving physical, sonic, and emotional presence. For such a narrative to emerge, an ongoing and mutual exchange of ideas was indispensable.

I see performance as an integral part of artistic creation in this format. The virtual stage is itself a performative construction—without it, immersion would not be possible. Composition, in this context, requires deep collaboration based on mutual recognition and a renunciation of fixed hierarchies between composer and performer. Creation happens in a space of listening, openness, and true co-authorship.

Improvisation was present throughout our collaboration, culminating in *Sound Imaginations Improvisations*—a fully improvised 28-minute piece in-

spired by your previous research. In that case, musical creation became my responsibility, and I consider it a genuine collaborative act. However, the recognition of improvisation as a creative practice is still challenged. George Lewis (2000) discusses how the dichotomy between composition and improvisation reflects a constructed asymmetry in Western musical culture, where composers are seen as “bringers of structure” and improvisers as sources of “effortless spontaneity,” often devaluing the latter.

Conclusion

The central concept of our telematic project was audiovisual immersion, aiming to emphasize the experience of presence through the convergence of sound, image, and performance. We focused on exploring images of Cássia’s performance, multiplied by the visuals in the videos. The emphasis was on the performer and the performance, keeping the technology invisible.

Our goal was to refine the audiovisual environment while creating the impression of live performance (liveness). We reached such a level of sophistication that viewers often could not tell whether they were watching a pre-recorded video or a real-time performance. In some concerts, we opened the camera to show the setting and confirm

that we were playing live. Still, the question remains: how can we create a high-quality immersive audiovisual performance while clearly conveying its “live” nature to the audience?

This experience also led us to reflect on the ethical and social foundations of telematic music. Such performances require fast, stable internet connections and equipment like computers, interfaces, and microphones—resources unavailable to many communities. Does telematic music expand or restrict freedom of communication and expression? Does it open new possibilities for creative participation or reproduce the exclusion mechanisms of hegemonic power centers?

As Vilém Flusser (1983) notes, technological apparatuses contain a fundamental ambiguity: on one hand, they open new experimental possibilities; on the other, they impose limits through their programs, inducing automatic behaviors and suppressing critique. This contradiction applies directly to the telematic music environment.

In telematic practice, listening gained new depth. Without physically co-present eye contact or gestures, we developed an expanded listening—affffective, cognitive, and embodied—capable of perceiving nuances and anticipating intentions. We learned to trust sound as a

medium of connection and affection, and silence as a fertile space for co-creation. Listening not only enabled the performance but became a compositional space in its own right.

Ultimately, this experience taught us that presence is not just a physical condition but a continuous gesture of attention, listening, and care. Making music at a distance—as we did for four years—means imagining the other, touching and being touched beyond matter. The virtual stage has become, for us, not a substitute for the real but a space of aesthetic and human transformation, where sound, image, and gesture intertwine in new ways of being together.

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Music

Paulo C. Chagas and Cássia Carrascoza (2020/21), *Mojave*, P. Chagas: live video; live electronics; C. Carrascoza: live flute
Permalink:
<http://mediathek.slub-dresden.de/vid90004387.html>

Paulo C. Chagas and Cássia Carrascoza (2022), *I Hear Your*

Breath, P. Chagas: live video; live electronics; C. Carrascoza: live flute
 Permalink:
<https://mediathek.slub-dresden.de/vid90004395.html>

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