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Special Issue: Permeabilities

Connecting Artistic and Critical Listening

Guest editor: Andy Graydon

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Sound Stage Screen (SSS) is a biannual peer-reviewed journal devoted to historical and theoretical research into the relations between music, performance, and media. An open-access journal published in English by Milano University Press (Italy), *SSS* addresses a wide range of phenomena, practices, and objects pertaining to sound and music in light of the interconnections between performing traditions and media archaeologies.

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Contents

Introduction

Andy Graydon

This special issue of *Sound Stage Screen* is devoted to theories and practices of sound and of listening, with a special emphasis on the conversation each contribution opens between media, between sense modalities, between disciplines, and between critical and poetic inquiries. Indeed, it is my hope that this collection of texts helps to illustrate how sound—as a theme and a subject of inquiry—is uniquely suited for exploring interstitial areas. Many of the contributions here take up issues of sound at exactly the points where they cross between areas of study, medium definitions, and ways of sensing and knowing. These explorations may appear to decenter sound itself, while simultaneously expanding its center to integrate a great deal of the world that might at first appear closed to it or beyond its proper borders. Key to this is a general attraction to the "inter-ness" of sound—including vibration, voicing, hearing, and listening—that takes relation as a primary value and operation. My goal in bringing together these diverse and individually powerful writings is to focus on the inter-subjective powers of sound and listening traced in each contribution, as well as to invite an inter-textual dialogue to emerge from their proximity.

The pieces in this issue run a gamut of interests, from sound art to interspecies listening, from mobile technologies to wind tunnel architectures, coastal geology to film captioning, colonial landscape photography to silence in music composition. Joining them together is an interest in the relational capacities of sounding and listening, and an exploration of the structures of relation that can be composed by, and of, acts of listening. Listening in this context refers to ways of relating between and across subjects to construct spaces or situations. These spaces of relation often suggest possibilities for reconfiguring their constituent subjects, and can, in the best cases, call into question the very notion of a subject's pre-existence prior to their entry into the relation. This idea of listening cannot be reduced

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to the audiological event of hearing, nor the specialized comprehension of musical structure. Rather, this is a listening that composes the structures of the self, of community and of space in order to allow new forms of activity, including discourse, art and music, but also politics and ethics, to emerge.

Previously I have suggested the term *relational arenas* as a way to describe listening structures of this kind. While it could be said that every performance, every work of art, even every gathering produces a relational arena, at least in potential, I think that a specific focus on the form might help reframe certain dichotomies in cultural discourse, bringing them into renewed relation. Collective spaces of understanding and world-building—from art production to critical and poetic writing, from scientific finding to transcendental knowing—can unfold from resonant collisions and conversations. These conversations are not just open-ended but also *opened-at-all-sides*, or permeable, and I argue this permeability is an important aspect of their effectiveness and meaningfulness. In this introduction I will briefly trace the contours of listening as an activity of relational arena-making, and touch on how each piece in this issue explores a permeable space of its own, while allowing a larger space of resonance between the writings to unfold.

In what senses and under what conditions can we say that listening creates a space? Barry Blesser and Linda Ruth Salter, in their detailed discussion of aural architectures, explore the linked concepts of the "acoustic horizon" and "acoustic arena" in creating these structures. Every listener is at the center of their own acoustic horizon, defined as "the maximum distance between a listener and source of sound where the sonic event can still be heard."[1] For example, the voice of an instructor in a lecture hall falls within the acoustic horizon of a student in the class listening to the lecture. However, the door to the classroom is open and sounds from the hallway outside are also within the student's acoustic horizon, competing for the student's attention. The student gets up and shuts the door, and now their acoustic horizon no longer extends to the space of the hallway, allowing better focus on the class. Meanwhile, each sound source is the center of its own acoustic arena, "a region where listeners are part of a community that shares an ability to hear a sonic event. An acoustic arena is centered at the sound source; listeners are inside or outside the arena of the sonic event."[2] To return to our example: after the student closes the door, an-

1 Barry Blesser and Linda-Ruth Salter, *Spaces Speak, Are You Listening?* (Cambridge: MIT Press, 2006), 22.

2 Blesser and Salter, 22.

other student who is late to class finds the lecture hall door locked when they try to enter. Even though they can see into the lecture hall through a window in the door, the student can't hear beyond it and so is excluded from the acoustic arena of the class. Significantly, they are not considered part of the class, specifically because the community of the class is defined by the reach of the instructor's voice. "The acoustic arena is the experience of a social spatiality, where a listener is connected to the sound-producing activities of other individuals."[3] Consider a third student, who is inside the hall, but sitting so far back they cannot hear the lecture either. They too would be outside the arena of the class; despite being visually and physically present, membership in the arena requires an overlapping of the acoustic horizons of the participants. The correlative powers of sounding and listening produce an elementary social architecture. Because it is based in sound, this sphere is active and dependent on continual activation, relating the impulse of sounding to the response of listening in order to exist. Acoustic arenas reveal something of the relational quality of space-making and suggest how sound can provide techniques for an experimental inquiry into social and aesthetic form. At the same time, sound reveals the momentary, dynamic, and sometimes fragile nature of these spherical structures. They must be established, then constantly maintained and enacted, a process which inevitably involves being challenged, compromised, deformed, and reformed. A space is not a fixed structure, but rather a formal process of building and relating.[4]

Florian Dombois, Helene Romakin, and Berit Seidel are the architects of a unique structure of this kind, taking the form of a wind tunnel in which they cultivate relational structures of discussion and exploration meant to transcend disciplines. As they discuss in their polyvocal text in this volume, the Wind Tunnel Festival launched in 2022 on the roof of the Zürich University of the Arts (ZHdK). Each year since then they have convened a cohort of scientists, writers, curators, critics, engineers, students, artists, and musicians inside the circular wind tunnel itself to share their work and explore aspects of flow and turbulence through collective experiments. The wind tunnel itself becomes a mediator more than a focus of study—

3 Blesser and Salter, 25.

4 Sanford Kwinter calls this true formalism: "any method that diagrams the proliferation of fundamental resonances and demonstrates how these accumulate into figures of order and shape [...]. Formalism demonstrates first and foremost that form is resonance and expression of embedded forces." See Sanford Kwinter, "Who's Afraid of Formalism?," in *Far from Equilibrium: Essays on Technology and Design Culture* (New York: Actar, 2008), 144–49.

an arena that embodies the qualities of circulation and exchange that they want the festival to produce. This issue of *Sound Stage Screen* is rich with other models of conversational knowledge, including dialogues between filmmaker and artist Alison O'Daniel and curator Pablo de Ocampo ("The Tuba Thieves"); between musicologist and scientist Ryan C. Clarke and poet and writer Michael Nardone ("A Sediment Diversion for the Audible World"); and an essay co-written by Katherine Behar and David Cecchetto, whose individual practices blend theoretical research with art and music production ("After Alerts").

In *Spheres*, an ambitious three-volume political poetics of human spaces, Peter Sloterdijk expands on and intensifies concepts of space as developed in arenas based on listening. "In the wall-less house of sounds, humans become the animals that come together by listening. Whatever else they might be, they are sonospheric communards."[5] In *Bubbles*, the first part of his *Sphereology*, Sloterdijk identifies the origins of this sonospheric construction in the prenatal relation between fetus and mother: a calling and listening that produces a space that is simultaneously the dawning of the subject, perhaps the soul. "What we call the soul in the language of immemorial traditions is, in its most sensitive core area, a system of resonance that is worked out in the audio-vocal communion of the prenatal mother-child sphere." As one of the first experiences of an individual's existence, this space-making through sonic call-and-response is something we approach reflexively and instinctively. More fundamentally it is something that we do in part to form ourselves in the first place; an activity we later engage in collectively and socially with a vestigial awareness that it in turn creates us, defines our subjective consciousness. As a developing subject, the listener is defined by relation, "in the synchronicity of greeting and listening; this movement toward each other forms the most intimate soul bubble."[6] The subject is never solitary, not self-integral, "does not have a center of its own that radiates and collects everything, but rather two epicenters that evoke each other through resonance."[7] Thus Sloterdijk's ontology begins with the number two, not centerless but doubly-centered, defined principally by this resonance between two agents and the space that is produced as a result of their co-vibration.

5 Peter Sloterdijk, *Bubbles*, *Spheres Volume I: Microspherology* (Los Angeles: Semiotext(e), 2011), 520.

6 Sloterdijk, 510–1.

7 Sloterdijk, 100.

The birth of the subject occurs in listening but this does not perpetually bind it to the maternal figure; instead a quality of the listening, a quality of construction through resonance, is projected across the subject's future experience, into its expanding reality of spaces. Likewise, the activities of resonant spaces need not be limited to what sound "does" as a medium or a perception. The quality of relation is the fundamental aspect of space-making, even as it is one of the most difficult to define perceptually. Brian Massumi, paraphrasing William James, puts it succinctly: "relations are not only real, they are really perceived, and directly so."[8] We could say that spaces, while occasioned by sounding and listening, achieve their effects in ways that are perceptually amodal, that is, they are not contained in any one sense modality but are of a different order. Massumi identifies experiences of movement, rhythm, and intensity as characteristically amodal, "meaning they are not in one sense mode or another. Nonsensuous, they can jump not just between situations but also between sense modes … It is the direct perception of what happens between the senses, in no one mode."[9] He uses the simple example of watching a billiard ball hit another and knocking it forward. In visual perception, what we see does not describe what we more fully perceive or feel: "One moves toward the other and stops. The other then starts and moves away. That is what we see. But what we feel perceptually is the movement of the first ball *continuing* with the second … Movement 'detaches' itself from one object and transfers to another … We are directly experiencing momentum, to which nothing visible corresponds as such."[10] Energy moving across a system is perceived as movement itself, detached from its objects, a movement that cannot be seen directly but is perceived amodally. There are many other examples of this type of transfer-perception or relation-sensing that are fully perceivable but not properly assignable to any particular sense modality. Massumi includes tunneling, entraining, ampliation, attraction, and resistance.[11] To that list I would add resonance, the originary energy of sounding and listening.

Sound fluxes across, amid, and through all the terms in the system, relating them through vibrational energies. A crowd, for example, moves together to a drum beat through which it realizes itself as one body, in a rhythm attributable to the entire collective. Here, relations are real, perhaps more real than the

8 Brian Massumi, *Semblance and Event: Activist Philosophy and the Occurrent Arts* (Cambridge: MIT Press, 2011), 86.

9 Massumi, 109–10.

10 Massumi, 106–107.

11 Massumi, 107.

objects they relate. Just as the subject formed in Sloterdijk's prenatal bubble is an effect of an originary resonance, here we see how both objects and subjects in a situation can be considered effects of abstract forces that simultaneously create the space of their relating: "subjects and objects are not preconstituted foundations for purposive movement yielding useful effects. They *are* effects."[12] Sounding and listening situations can powerfully excite this intuition, a fitting medium for comprehending the energies of a "continuing *across* that seamlessly links the separate elements or inputs as belonging to the same change […]. It is, simply: relationship. Directly perceptually-felt; 'nonsensuously' perceived."[13] Massumi calls the spaces opened by such experiences *relational fields*.[14] We could go on to describe a relational field initiated through sounding and listening as a *relational arena*, combining the complementary concepts by Blesser & Salter and Massumi. We have the opportunity to regard sound or sound art not as a medium-specific discipline but as a resonant occasion for constructing relational arenas, amodal transfers in a social or collective space. Viewed this way, even the perpetual debates over the definition of "sound art" can be recast as productive openings onto new construction-relations, as opportunities to explore potentials and create novel realities.

"Resonance" by Caroline A. Jones sets the tone for this issue, calling for a listening that refuses to ignore the liquid nature of the body and the vibrational reality that exceeds the sonic, revealing how resonance "complicates reductive abstraction."[15] Jones traces also the important dialogues between art and science that vibratory practices can excite, a "switch from 'signal' to field [that] is characteristic of resonant epistemologies."[16] In her filmmaking and art practice, Alison O'Daniel directs our attention to the urgency of listening beyond the definitions of sound, toward a wider world attuned not just to more signals but to more subjects, and different ways of knowing and being in the world. Michael Nardone and Ryan C. Clarke's conversation follows the complex turbulences that result from an amodal examination of the coastal geology, extractive practices of colonial capital, and the "horizontal afrologics" of Black music in the Mississippi Delta. As Clarke concludes about New Orleans, "here lies a city of echolocation."[17]

12 Massumi, 33.
13 Massumi, 107.
14 Massumi, 20.
15 Caroline A. Jones, "Resonance," *infra*, 33.
16 Jones, 26.
17 Ryan C. Clarke in dialogue with Michael Nardone, "A Sediment Diversion for the Audible World," *infra*, 60.

We might well ask if the spherical relational arena is really the best shape for critical exploration. Surely the bubble is an unfortunate form to hold up as the epitome of spatial construction: the sealed sphere, the walled compound (sometimes in the shape of an ivory tower), the stifling enclosure? On the contrary, however, the bubble can be understood as the exemplary shape of life, and life's engagement with time and the future. To understand this, we will shift our attention to the membrane of the bubble, the border that defines the sphere, distinguishing inside from outside. Sloterdijk begins the *Spheres* trilogy within the micro-relational form of the bubble, but ends with a consideration of the macro-network of the Foam. Foams are the complex spaces in which the private bubbles of individual life and self-relation are pressed together in "a contamination-rich field of 'connected isolations.'"[18] It is a form that is both private and collective, in constant contact but held apart by internal atmospheric pressure and the tensegrity of each bubble membrane. This membrane is both literal and powerfully metaphorical, referring to architectural enclosures, familial relations, and acoustic horizons equally in a spectrum of human activities that produce the envelopes of social space. Foams are "multiplicities of loosely touching lifeworldly cells, each of which, due to its individual width, possesses the dignity of a universe."[19] It is this continual relating across the collective and the individual, between outward expansion and inward singularity, that produces the fundamental dynamic of social space and the becoming of civilization.

The membrane's surface functions dually as containing barrier and connective surface, just as the cell wall is for microscopic life, and as the skin and eardrum are for larger animals. Gilbert Simondon, in his pioneering research on individuation and ontogenesis considers the membrane constitutive of life itself. Elizabeth Grosz summarizes Simondon's work in *The Incorporeal*, her critical exploration of the interaction of the ideal and the material in concepts of ontology, leading to new considerations in ethics. For Grosz, how a cell is constituted tells us much about how a life should be led, what a future could look like, and how a new and better society could come into being. In her reading of Simondon, the membrane divides the world into a milieu of the interior, and a milieu of the exterior. "[T]he living organism is a transductive mediation of different degrees and forms of exteriority and interiority, from their absolute

18 Peter Sloterdijk, *Foams*, *Spheres Volume III: Plural Spherology* (Los Angeles: Semiotext(e), 2016), 537.

19 Sloterdijk, 565.

separation (with the evolutionary eruption of life) to their ever-mediated cooperation (in technologies)."[20] Sloterdijk brings a knowledge of this biological structuring to his analysis of social spaces, as bubbles suspended in foams. The bubble's membrane presses open the space and maintains the limits of its private integrity. At the same time, "one always shares at least one partition with an adjacent world-cell" and it is through the transmission across these connected membranes that the individualized bubbles reach and affect one another.[21] The analogy drawn from sounding and listening is again instructive: the membrane of an acoustic arena is defined by the sphere of listeners the sound brings into relation. That resonant energy is also a disturbing force, upsetting its separation from other bubbles. Sounding necessarily transduces its energies through media and across membranes; it co-vibrates and communes between separate spaces. Sound has relational force not only within bubbles or relation-spaces but between them, across individual bubbles in the foam. It causes the foam itself to resonate: within their co-isolation a greeting and listening begins to take place, drawing the multiple containments into new resonating macro-relational complexes.

In my own work as a moving image artist I have attempted to develop transductive methods of creative research and production, most recently with the audiovisual installation *The Great Refractor* (2024).[22] Previous work involving interviews with scientists about their observations and models of knowledge led me to the writings of Stefan Helmreich, an anthropologist of science specializing in sound, listening and waves. Helmreich develops a theory of transductive listening: in order to understand a phenomenon in depth one must attend to the various media that a signal or data has passed through on its way to the observer. This could include accounting for the refraction of waves as they pass from water into air, or through the glass of a lens; or the filtering of sound heard through a wall as it vibrates the solid materials of a structure; or even the alterations that occur when an idea is shared from one discipline or discourse to another. To listen well then is to be at all points alert to the effects produced by these transductions and how they shape the resulting phenomena, as well as how they illuminate the larger situation in which the signal circulates. As Helmreich contends,

20 Elizabeth Grosz, *The Incorporeal: Ontology, Ethics, and the Limits of Materialism* (New York: Columbia University Press, 2017), 184.

21 Sloterdijk, *Foams*, 565.

22 *The Great Refractor*, accessed October 20, 2025. https://www.andygraydon.net/The-Great-Refractor.

"More expansively, I suggest that a transductive ear can help to audit the boundaries, to listen for how subjects, objects, and presences—at various scales—are made […]. To think transductively is not only to listen to the changing qualities of signals as they propagate across media but also to inquire into the idea of the signal itself."[23]

In making *The Great Refractor*, I took up the challenge to think transductively by convening a group of researchers, including scientists but also artists and writers involved in research, and asked them to join me in a chorus: we listened to a set of audio recordings of their own findings and those of their peers—sounds that included hydrophone recordings; sunspot activity; gravitational waves; EMF radiation from telescope arrays—then imitated these concrete noises with our voices, becoming an unruly chorus of vocal utterances. The goal was not to decipher these findings as signals, but to inhabit their forms and energies from an intimate, even internal vantage—to bring the signal inside and emit it again from oneself, then trade it along to the next participant, tracing the transductive modulations occurring down the chain of listening, interpretation and expression. The results of this process can be seen in the screening version of The Great Refractor available on *SSS Lab*. I include the work here in conjunction with this issue of *Sound Stage Screen* because it represents the beginning phases of a collective thought process leading to, and continuing through, the issue's development.[24] By taking the signal inside and exercising its potentials through one's own, each participant in *The Great Refractor* opens a communication between world and self that shows both to be fundamentally permeable, and indeed finds them already engaged in an ongoing conversation. The nature of inquiry shifts from object to the entire sensitive system linking action, sensing and knowing, effect and affect in a circulating rhythm. Circulating, but not closed: the transductive listener, even when attending to one's own voice, is attuned to influences from the outside at all times—to the crossing of membranes—from cell walls to ear drums to architectural partitions to disciplinary borders. It is in allowing for the active vibration, the disturbance, of the self across these thresholds that a greater openness to the forms of the strange outside can emerge, and perhaps become incorporated.

23 Stefan Helmreich, "An Anthropologist Underwater: Immersive Soundscapes, Submarine Cyborgs, and Transductive Ethnography," *American Ethnologist* 34, no. 4 (2007): 632–3.

24 See "Andy Graydon - The Great Refractor," *SSS Lab* (October 25, 2025), https://youtu.be/_zFCnJLCLMk.

This disturbance is rich in its implications. In Grosz's unpacking of Simondon's theories of biological becoming or ontogenesis, she is careful to emphasize the membrane's role in not only creating the individual, but in initiating a notion of time for the organism. The action of bringing-across the membrane defines the past and future: "The present can be understood as a movement of metastability between interior and exterior, between the past that constitutes the interior and the future which beckons from outside."[25] The crossing of the membrane initiates a lived time, a bringing-into-the present/interior from the future/exterior, the living through of which becomes the past of the organism. "For Simondon, the future lies on the exterior of the membrane, the past on the interior of the membrane, and the living being is a manner of regulation of the interaction of the multiple points of the past with the impending actions of the future."[26] At the same time, life changes qualitatively the entire notion of time, bringing it into a constantly folding and distending self-relation. "Life transforms the continuity of temporality, the time of physics, into forms of condensation, contraction, succession, chronologies not only of continuity but also of discontinuity and envelopment."[27] The membrane is critical not simply for the individuation of subjects and spaces, or to the expansion of those spaces into wider complexes, but to a more fundamental expansion: the production of the future itself and the potential for change. "This means that every individual is open to becoming more, to further orders or dimensions of self-complication."[28] Changes in life made by life, toward the goal of more and new forms of living. Again, relations are paramount, as it is this new temporality of life that forces the emergence of the thinking subject itself. Grosz quotes Deleuze and Guattari's intuition that it may be the thought which forms the thinker, the field which creates the subject, and not the other way around: "Philosophy, art, and science are not the mental objects of an objectified brain but the three aspects under which the brain becomes subject."[29]

The fundamental role of the membrane, as a barrier of separation, a connective surface and a site of necessary disturbance, is echoed in many of

25 Grosz, *The Incorporeal*, 186.

26 Grosz, 186.

27 Grosz, 185.

28 Grosz, 186.

29 Gilles Deleuze and Félix Guattari, *What is Philosophy?*, trans. Hugh Tomlinson and Graham Burchill (New York: Columbia University Press, 1991), 210. Quoted in Grosz, *The Incorporeal*, 163.

this issue's essays. In "The Soundscape of Nothing," Gabriel Saloman Mindel pinpoints the importance of Raven Chacon's stipulation that his work be played on a church organ, binding its performance to the sites where indigenous voices were displaced by the force of settler religion and power, becoming the "voiceless mass" of the work's title. The sounding of the work itself becomes a resonant act of disturbance, and at the same time an attempted reclamation, a re-making of a new whole from what had been torn apart by colonialism. This question of how to disturb structures effectively in order to create new wholes is taken up by Ryan C. Clarke's notion, spanning geology, cultural history, and musicology, "of the sediment diversion as a way to resist those forces that conspire, contain, and foreclose the world."[30] Meanwhile, the figure of silence haunts the edges of this discourse, looming spectrally over discussions of sound and space like a disturbance in the negative, or an anticipated call that never arrives. Behar and Cecchetto examine in terribly familiar detail the negative resonance of sound withheld, in the form of mobile device alerts that no longer need to ring because they have become fully internalized by us as users. These tacit cues, an amodal graft into our attention and consciousness, are integral to techno-structures of extraction, exploitation and exhaustion, a haunting from which we may never be free. Mindel reminds us that "*Voiceless Mass* is music haunted by the silence of its missing choir,"[31] and explores the political violence that can occur when we define silence as emptiness, as with modern music's fetishization of silence as purity, and with landscape photography's attempts to render nature as empty space. Throughout these discussions, John Cage's infamous "silent piece" *4′33″* appears repeatedly, an impish house spirit whose provocations cannot be ignored, no matter how much one tries. In discussing a cameo by *4′33″* in her film *The Tuba Thieves*, O'Daniel locates the productive friction at the center of the canonical piece, and its valence for our interest in the membrane as both exclusion and connection: "Deafness is also misunderstood or mythologized as being about silence or being an experience of silence … Part of what John Cage was investigating, that I think is so beautiful and powerful, is this allowance of everything to come in."[32] It is, then, with this invitation for everything to come in that I welcome you to this issue of *Sound Stage Screen*.

30 Clarke and Nardone, 48.

31 Gabriel Saloman Mindel, "The Soundscape of Nothing: Raven Chacon's Silence Against Settler Colonialism," *infra*, 119.

32 Alison O'Daniel in conversation with Pablo de Ocampo, "The Tuba Thieves," *infra*, 93–4.

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ARTICLE

Resonance*

Caroline A. Jones

Although the origins of the word *resonance* attach the concept to sound—"the reinforcement of sound by reflection or by the synchronous vibration of a surrounding space or a neighboring object"[1]—a wider definition needs to embrace any vibrational movement that unfolds over time in a body, in sympathetic response to vibratory stimulus from outside it. Resonance as sympathetic vibration is often felt before it is heard.[2] *Sympathetic vibration* is the phrase that already references this *feeling*: Sym[with]+Pathos[feeling] = feeling-with-vibration. This essay takes up the "feeling-with" relation to resonance and its co-vibrational energies. Building on much existing scholarship (Christoph Cox, Veit Erlmann, Nina Eidsheim, Salomé Voegelin, and artists such as Pauline Oliveros, Christine Sun Kim, Alvin Lucier, and Jana Winderen), I want to offer a *resonance that expands beyond the ear*. More than "reduced listening" or insistence on immediate "affect," this essay recommends an expanded embrace of feeling, distributed across and beyond a body, experienced over time and in intellection with others on the planet.[3] Thought fully, resonance pushes away from the audist insistence on

* I am grateful to Andy Graydon and the two extremely generous peer reviewers, who encouraged this art historian to tackle the expanding literature on listening and sound.

1 "Resonance," *Oxford English Dictionary* (2010), https://doi.org/10.1093/OED/9474612525. Beyond the OED, space must be construed as more than "void." Space includes the air-filled and the liquid-suffused, even the molecular spaces between material solids resonates. With gravity waves, space may be seen to include vibrations of space-time itself, sonified to resonate beyond the detectors. See Stefan Helmreich, "Gravity's Reverb: Listening to Space-Time, or Articulating the Sounds of Gravitational-Wave Detection," *Cultural Anthropology* 31, no. 4 (2016): 464–92. For fluid-filled, see Nina Eidsheim, "Sensing Voice: Materiality and the Lived Body in Singing and Listening," *The Senses and Society*, 6, no. 2 (2011): 133–55.

2 Christoph Cox, *Sonic Flux: Sound, Art and Metaphysics* (Chicago: University of Chicago Press, 2018).

3 "Reduced listening" was a concept innovated by French composer Pierre Schaeffer, iden-

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mechanical and mathematical causality in a floriated Ear toward entangled, temporally con-founding, conceptually rigorous, embodied and potentially multi-species co-presence.

Resonance has become a desirable theoretical tool in recent years, showing up in philosophy and sociology as well as sound studies.[4] But if I begin by sharing the enthusiasm for the sympathy of shared vibrations, I note for the reader: in this essay, resonance is not always kind. Resonance opens onto multiple possibilities: vibratory phenomena can arise as disturbance as much as harmony. Unsettling and unfixing the boundaries of a self, resonance can arise via situated experiences of artworks that vibrate bodies and organs, yielding the potential for humans to recognize that they are vibrant matter in concert with the planet.[5]

Buzzing

In speculating on how an infant human emerges into consciousness, William James deployed the active acoustic metaphor of a *buzzing* confusion: multiplied resonant vibrations colliding in a newly-sensing body. Buzzing is difficult to isolate as purely auditory; it has haptic qualia. It also invokes richly sonic possible worlds,[6] suggestive of the densities of arthropod swarming. More-than-human species fuse buzzing sounds with the buzzing look of wings in motion—as in the waggle dance of bees. In these social insects, buzzing is aligned with bodily orientation, temporal sequencing, and the vibrations given to the hive by other bees' vigorous movements.

tifying an approach to sound that defers decoding meaning, staying with the experience of the sonic object itself. Michel Chion offers this definition: "[reduced listening] focuses on the traits of the sound itself, independent of its cause and of its meaning. Reduced listening takes the sound—verbal, played on an instrument, noises, or whatever—as itself the object to be observed." See Michel Chion, "The Three Listening Modes," in *Audio-Vision: Sound on Screen*, trans. Claudia Gorbman (New York: Columbia University Press, 2019), 25–34. The model of reduced listening, in this essay, is suggestive but must be extended to the *felt not heard*. This essay does not align with affect theory, and in this I am with Kane: embodied cognition of the type I am describing is a continuum, and affect is an inseparable component. See Brian Kane, "Sound Studies without Auditory Culture: A Critique of the Ontological Turn," *Sound Studies* 1, no. 1 (2015): 2–21.

4 Harmut Rosa, *Resonance: A Sociology of our Relation to the World* (Cambridge: Polity, 2019).

5 Jane Bennett, *Vibrant Matter: A Political Ecology of Things* (Durham, NC: Duke University Press, 2010).

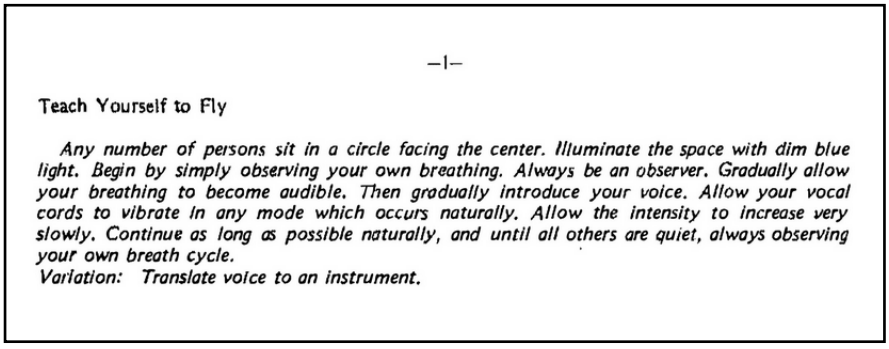
6 Salomé Voegelin, *Sonic Possible Worlds: Hearing the Continuum of Sound* (London: Bloomsbury, 2021).

Taken up mimetically by community members, specific instances of the waggle dance communicate precise information about the best site for the future hivemind.[7] Yet in contrast to the bees' developing certainty, James's buzzing "confusion" signifies both something *hard to figure out* and an overlapping *coming-togetherness* (con-fusion) in the infant, whose synapses are exploding with connections that must later be "pruned" (for language, anti-synaesthetic sensory organization, and appropriate social exchange). For James, this process eventually condenses, concertizes, and clarifies the resonant "buzzing" into a meaning-making-mind.

Between the bee dance and the bewildered infant, harboring uncertainty about whether resonance must be "resolved" into a message might be what sound art is good for. Encountering a work of art aimed to resonate us may open up the settled auditor to the sonic possible worlds James evokes, of "blooming" (as well as buzzing) confusion. Composer Pauline Oliveros taps metaphors of resonant co-creation and co-presence in her sonic meditation *Teach Yourself to Fly* (1970). *Teach Yourself to Fly* names its transcendence of a listening ear, imagining whole bodies floating weightless in the air, propelled by the shared vibrations of participant-listeners-resonators holding single tones whose amplitude and pitch are unspecified but interwoven. Hums behind closed lips, open mouths that "vocalize," air pushed through reeds, tones from resinous catgut slowly dragged across twined strings of sheep intestine, nylon, and steel—these are all permitted sources of vibration within the piece, which can also be as simple as a circle of humans with no instruments other than their own bodies' breath, vocal cords, and watery viscera. Closed eyes intensify the experience, as tapestries of tones mingle in ears and envelop the body, moving through its various tissues. Yes, we can hear it, but *Fly* also produces a veritable organology for participating humans: vibrating larynges, but also cavities in the head, sinuses, kidneys, bladders, lungs, bones—each internal "instrument" resonating within its own highly variable materiality and resonant wavelengths. The score tells us that to perform this piece, we must "always be an observer" and also "gradually introduce [our] voice." To "hear" this composition by Oliveros, you must be both attending and vocalizing. There is no distinction between "audience" and "performer," a gift of the art world's unfixity. Both categories dissolve, becoming interfaces with frequencies of audible and inaudible percussive waves that hoist us into the cloud of proximate participant sound. To fuse attending and vibrating actions is to acknowledge the mingled sensation of *resonance*, here in joyful ascent.

7 Thomas Seeley, *Honeybee Democracy* (Princeton: Princeton University Press, 2010).

Fig. 1 – Pauline Oliveros and the ♀ Ensemble performing *Teach Yourself to Fly* in Rancho Santa Fe, CA (1970). Foreground to the left around: Lin Barron, cello, Lynn Lonidier, cello, Pauline Oliveros, accordion, Joan George, bass clarinet; center seated foreground to the left around voices: Chris Voigt, Shirley Wong, Bonnie Barnett and Betty Wong © Pauline Oliveros Papers. MSS 102. Mandeville Special Collections Library, University of California, San Diego.



—1—

Teach Yourself to Fly

Any number of persons sit in a circle facing the center. Illuminate the space with dim blue light. Begin by simply observing your own breathing. Always be an observer. Gradually allow your breathing to become audible. Then gradually introduce your voice. Allow your vocal cords to vibrate in any mode which occurs naturally. Allow the intensity to increase very slowly. Continue as long as possible naturally, and until all others are quiet, always observing your own breath cycle.
Variation: Translate voice to an instrument.

Fig. 2 – The score as published in Pauline Oliveros, *Sonic Meditations* (Sharon: Smith Publications, 1971).

If and when "resonance" is summoned into human conversations about sound, it can work to hone alternatives to meaning-laden "listening" (a word absent from the score for *Teach Yourself to Fly*). As in Oliveros's meditations on the sonic, the metaphorics of resonance carve new sensory possibilities out of co-presence and vibrating matter. The word "sound" already anticipates the epistemic capture that is called "listening" or "hearing." Yet sound is only one means by which matter vibrates and hence resonates us. Of course, sound is a highly prized "signal" in an evolutionary game of taking information from a rustling, crackling, roaring, singing, stridulating multi-species planet—but there are other vibrations that penetrate and resound in bodies that move and are moved, in motion with/through/against the pulse of waveforms that circulate on a dynamic, watery Earth.

Resonance begins in Western philosophies with Pythagoras's discordant hammer;[8] it becomes applied science with the rigorous "speech chain" causalities of physiology.[9] In between those histories, an empiricist such as Hermann von Helmholtz will want resonance to be quantifiable, a genealogy that still governs an entire branch of neuroscience and the physics of ion oscillations, in which resonance can be mathematicized as Fourier transforms. Scientists in modernity want to stabilize physiological phenomena; artists summon resonance to derange such certainty. Are my sensed vibrations in *Fly* from me, or all of us? As I learn to fly, that levity comes in a cloud of co-presence to the bodies and organs buzzing together.

Throbbing

A capacious bucket for vibratory phenomena, resonance throbs us—and cultural, scientific, and artistic approaches to this concept sharpen general queries about how (or whether) we can be certain about what we think we know of the world outside our ears. As I will argue more expansively below, attending to resonance is one way of becoming uniquely tuned to a more-than-human planet in which life envelops and sustains us, in entangled and intradependent ways. According to Veit Erlmann, acoustic *and* philosophical ways of thinking about resonance open us to different ways of

8 Daniel Heller-Roazen, *The Fifth Hammer: Pythagoras and the Disharmony of the World* (New York: Zone, 2011).

9 Peter B. Denes and Elliot N. Pinson, *The Speech Chain: The Physics and Biology of Spoken Language* (Long Grove: Waveland Press, 2015).

listening, being, and reasoning in a world of oscillating matter. As Erlmann chronicled in *Reason and Resonance*,[10] the body's sensory equipage (eye and ear, but also soul and viscera) was understood to be capable of resonance-as-sympathetic vibration; Erlmann follows scientists who sleuth out fibers and membranes and bony tubes inside the human ear to find physical "reason" and mathematical relations in auditory capacities to vibrate sympathetically to music and sound. What are consonance and dissonance? Do these have physical correlates in an outer, middle, and inner ear that unite to bridge the mysterious divide between inside sensations and outside phenomena? Do these organs behave with the self-logic of that beauty, mathematics? The age of Helmholtz and James determined how the resonating subject would be understood as an anatomical collection of strings and fibers, hammers and drums, rods and cones—all of which enact the epistemology of little machines, oscillating with various energies coming from the world to form aesthetic relations called *harmony* with resonating matter. Helmholtz, for example, dominated the discourse about resonance for decades, by making measurable science and numbers from the resonant tones that air made, moving rapidly across small openings in otherwise closed vessels: what some English-speakers call *wind throb*.

The vernacular phrase "wind throb" gives us a rather different figure to conjure with, an alternative to numeric fixity. In contrast to "5" or "12," we have a vessel helplessly throbbing (viscerally or materially) with dynamic planetary atmospheres that entrain that body in a rhythm shaped by its form but not of its own making. By comparison, Helmholtzian science would obsess over bony and fibrous matter at microscopic scales, looking for physical guarantors of mathematical relations that would make reason out of resonance. Exploring the resonant phenomena perceived by humans, the mid-nineteenth-century German empiricist was determined to demonstrate his "piano key" theory of hearing—perceived sound was likened to the trichromacy of human vision, explained as a series of mechanical triggers yielding invariant pitch perception in dedicated structures of the ear. Causal steps in the Helmholtzian view: percussive forces are transferred from air into ear, eventually hitting cochlear "keys" in the organ of Corti to activate a single nerve fiber for each sensation of tone.[11] This yielded a

10 Veit Erlmann, *Reason and Resonance: A History of Modern Aurality* (New York: Zone, 2010).

11 "In the cochlea of the internal ear, the ends of the nerve fibers, which lie spread out regularly side by side, are provided with minute elastic appendages (the rods of Corti) arranged like the keys and hammers of a piano. My hypothesis is that each of these separate

Fig. 3 and 4 – These particular tarnished Helmholtz resonators were imported to Boston, where they were visited by a young Canadian, Alexander Graham Bell, sent down by his father to experience the acoustic instruments in the MIT Physics collection. They are now housed in the MIT Museum, Cambridge Massachusetts USA.

piano-string analogy. To tame further the mysteries of resonance the experimentalist made purpose-built *Helmholtz resonators*: tuned vessels (first glass, then brass) allowing composite tones to be separated into precise resonant frequencies, each belonging to the diminishing or increasing size of its container, the set arranged in pre-determined mathematical relations. These adorable collections of hand-sized burnished orbs quickly evolved, from bespoke furnishings in Helmholtz's private laboratory to hundreds of kits branded under his name. Sold to the teachers and universities that could afford them, they aimed to enlighten physics and psychology students.[12] The first of the resonators had been manufactured to Helmholtz's specifications by Rudolph Koenig of Paris, their tapering "necks" placed gently in the ear to allow humans to hear sympathetic vibrations of the partial tones in a given sound source. Not surprisingly, the piano key, depressed and string sonified, would be not only the ready analogy for co-

nerve fibers is constructed so as to be sensitive to a definite tone, to which its elastic fiber vibrates in perfect consonance." Hermann von Helmholtz, 1868 lecture on the human senses given in Cologne, Germany; quoted in Timothy Lenoir, "Helmholtz & the Materialities of Communication," *Osiris* 9 (1994): 196.

12 For where these objects "drifted" in the long nineteenth century, see David Pantalony, "Variations on a Theme: The Movement of Acoustic Resonators through Multiple Contexts," *Sound & Science* (July 17, 2019), https://soundandscience.net/contributor-essays/variations-on-a-theme-the-movement-of-acoustic-resonators-through-multiple-contexts/.

chlear tone recognition, but the tone generator of choice for these resonant vessels (blow across a soda bottle for a cheap equivalent of the effect, truly summoned as some throbbing wind).

Doubtless, the words we devise to talk about music, sound, partial tones, resonance, sonic oscillations and throbbing vibrations are frustratingly inadequate. Does the word "timbre" capture what it is that my ears do when I distinguish a voiced flute from a factory whistle?—these *objets sonores* may have identical frequencies, but once compressed in an MP3 format and further altered by electromagnetic interference scrambling my kitchen radio and clipping off a tone's attack, they can be challenging to distinguish. Far from a clean Fourier sine wave, *timbre* seems to be a function of the attack and diminution of a tone, not its pitch. From the medieval Greek *τύμπανον* —used for virtually all instruments except, ironically, the drum—"timbre" is the kind of blurred-edge concept characteristic of resonances of all kinds. Frequency cannot even control middle C—and that imprecision might then yield a metaphorical C, if you accept that a conceptualized pitch will actually vary from continent to continent, orchestra to orchestra, and perhaps even ear to ear in actual wavelength. So, despite "resonance" being tamed as frequency, it continues to thrive as fuzzy sonic material, as well as metaphor, in cultural circulation.

Fuzzy and buzzy, resonance is rather more like James than Helmholtz. Unlike the German scientist's obsession with separating tones into their partials (captured in those handy vibratory orbs), James's pragmatism was holistic. Perhaps this can be a general contrast drawn between two branches of *Naturphilosophie*, one half splitting into mechanistic physiology, and the other yielding an emergent domain of psychology. James (and John Dewey after him) held meaning to emerge as a matter of experience rather than physico-mathematical relations.

Jamesian fuzzy logics would not be tolerated by later neuroscientists (the prefix "neuro" adopting that hard, physical, "nerve fiber" in order to link to physiologists' mechanical claims). As late as 2014, acoustic neuroscience researchers framed "resonance" as a problem for hearing aid design: messy, unorganized, chaotic "noise" in the logocentric system.[13] For language-based consciousness to claim a kind of knowledge of the world, resonant phenomena (in such a neuroscientific instrumentalism) must be

13 See Joshua McDermott, neuroscientist of audition, presenting in the "Sounding – Resonance" segment of the MIT symposium *Seeing, Sounding, Sensing* in 2014, https://www.youtube.com/watch?v=RS9tohXCosg&t=1784s (October 23, 2014).

trammeled and channeled for signal-sending. Hearing aids and cochlear implants both want resonance designed out, via relays of gating, filtering, sorting, and signal processing—fostering the goal of making a mental "identification" of the source and capturing linguistic meaning for strictly human business.

Thrumming

By contrast, for the differently-abled, the thrumming of resonance is rich with non-verbal information about the world. Both Georgina Kleege's homage to her white cane as sonorous technology[14] and Alvin Lucier's breakthrough sound work *I am Sitting in a Room* (1969) construct the resonant domain as a field of spatial relations, where the world surrounds and resonates us. Christine Sun Kim programs a bench with earphones that all who sit there can feel, but only some can hear (*one week of lullabies for roux*, 2018). This work stages resonance between hearing and deaf populations—if hearing divides, resonance unites the bodies in its field of thrumming oscillations.[15] Resonance offers the differently-vocal (Lucier's stuttering) or the non-visual (Kleege's Blind identity) or the anti-audist (Kim's signing communities) a human enlargement of expertise based on "soundings" that understand the body as permeable to the world's vibrations, attuned to its echoes, and untroubled by acousma. We do not need to identify the sound's source to experience the field's sonorous materialities.

This is explicitly not a neutral or universal resonance. Each body, being different and unique, will experience resonance uniquely, just as the "room tone" of Lucier's composition will differ from space to space. Neither is the thrumming of resonance easily slotted as pre- or anti-cognitive (as in

14 Sara Hendren, "The White Cane as Technology," *The Atlantic*, November 6, 2013, https://www.theatlantic.com/technology/archive/2013/11/the-white-cane-as-technology/281167/.

15 "For … *one week of lullabies for roux* (2018), Kim commissioned a group of friends to create alternative lullabies for her daughter, Roux. Adhering to a set of rules including directives to omit lyrics and speech and focus on low frequencies, these compositions serve to vary what Kim has termed the 'sound diet' for her child, raised trilingually in ASL, German Sign Language (DGS), and German, and to place equal weight on all three in a culture that tends to ascribe lesser relevance to signed communication." See "Christine Sun Kim: Off the Charts," MIT List Visual Art Center, https://listart.mit.edu/exhibitions/christine-sun-kim-charts (accessed June 17, 2024).

affect studies[16]). In recent years, scholarship has multiplied approaches to resonance through Queer sonorities or Indigenous resonant worlds.[17] Anti-essentialist, fully cultural resonance is what we want to theorize—but in the art, there may be an initial resonant encounter that sets theory aside for immanence (if only temporarily). Being with Oliveros's *Fly*, or sitting with Sun Kim's bench, allows a subsequent reflection on organology (the resonance within and among fleshy, watery parts) that can be disentangled from audition within a situated aesthetic experience. The claim being made here is that resonance is *different* from the signal-oriented science of hearing that technologies such as the "hearing aid" exist to exploit.

Expansive works of culture, sound art experiences foil the hearing aid's necessary reductionism. Resonance is generously empirical rather than abstract. It tells us about various sources, all of them interesting. Like the sounds of water being poured into a vessel, vibrational information is richly multifaceted, telling some who pay attention that: the water is hot (or cold), the volume being poured is measly (or voluminous), the vessel is large (or small), it sits on the table (or the floor) inside a tiny room (or a vast chamber) and is near to hand (or out of reach from the listener).[18] This switch from "signal" to field is characteristic of resonant epistemologies—rather than reductive, they are enlarging. Rather than a compulsively consulted Cartesian interior, they are open to the always-entangled relations with a dynamic world.

Put differently, the gates and filters that the admirable Bell Labs collaborators Denes and Pinson first wrote about in the 1960s are only part of the story. Hammers, stirrups, tympani, and their quasi-mechanical "cussive" forces (percussion, discussion, concussion) are there, but thrumming unsettles mechanistic conceptions of these bits of bone and cartilage. "Feeling with vibration" goes beyond the bony; we might even give political agency to the sympathetic vibrational components of the assemblage as suggestively *feminist*: hairs, flesh, and fluids.[19] Even Erlmann, who has done so much

16 See Steve Goodman, *Sonic Warfare: Sound, Affect, and the Ecology of Fear* (Cambridge, MA: MIT Press, 2009).

17 Voegelin, *Sonic Possible Worlds*; Dylan Robinson, *Hungry Listening: Resonant theory for Indigenous sound studies* (Minneapolis: University of Minnesota Press, 2020).

18 Tanushree Agrawal and Adena Schachner, "Hearing Water Temperature: Characterizing the Development of Nuanced Perception of Sound Sources," *Developmental Science* 26, no. 3 (2023): e13321.

19 While Voegelin is clearly important to this argument, I bring feminist critique and queer theory to bear on the "hard" sciences of physiology, which systematically downplay the

to thicken the "*cutere*" of rhythm and pulse in resonance, charts the history of aurality as only within an ear, diagrammed only via the dry tissues flattened by anatomists and sliced for microscopy. In life, the human body is a sack of circulating fluids of one kind or another, membranes robustly organizing cells, spongy bags and glands, a meshwork of networked conduits to keep things moving.

Fluidics

Playing a constitutive role in the human reality of feeling-with sound, fluids contribute an essential step in how the watery mammalian body takes in vibrations; some will be experienced as "audible."[20] Moreover, the privileged ear, divided neatly by anatomists into outer, middle, and inner has evolved to have as its most crucial final step an almost oceanic sogginess—the fleshy basilar membrane:

Outer ear: resonators conveying pressure waves from the world; pinna, external auditory canal, and tympanic membrane (*air*);
Middle ear: impedance reduction via pressure amplification in ossicles (the malleus, incus, and stapes), which aim their "cussives" through the cochlear oval window (*air*);
Inner ear: frequency separation propagating to nerves; bony and membranous labyrinth containing cochlea, semicircular canals, utricle, and saccule (*fluid*).[21]

role of fluids in audition. Beyond the physio-mechanisms of the ear, the present essay aims to go beyond the audist world of "hearing" to visceral sensing of resonance. There is bone conduction, but also vibrating, fluid-filled, embodied organology.

20 And how the watery body produces them! The beat of blood, cilia-propelled mucus and lymphatic fluid, doses of timed glandular secretions, and the under-discussed push of chemicals necessary for intra-synaptic propagation of nerve "impulses," all are fluid pulsions of one kind or another.

21 The author's chart of how anatomists of audition describe functions and anatomical features of the outer, middle, and inner ear, with an announcement of the medium in which soundwaves are being passed along. This diagram is informed by, but contrasted with, two sources on human auditory anatomy and function: Peter B. Denes and Elliot N. Pinson, *The Speech Chain: The Physics and Biology of Spoken Language* (Long Grove: Waveland, 2015); David M. Bruss and Jack A. Shohet, "Neuroanatomy, Ear," *StatPearls* (2023), https://www.ncbi.nlm.nih.gov/books/NBK551658. These sources are composited as critique of hard and fuzzy logics via decades of teaching the MIT interdisciplinary subject Resonance with my

This flexible structure separates two fluid domains, and the "membranous labyrinth" filled with lymphatic fluids constitutes a whole that embraces a cochlea whose fluid-filled structures also make use of different densities in liquids and colloids—watery material *crucial to wave propagation*. Yes to bony bits, but double yes to the unctuous flows that entangle bodies with resounding sounds, securing, in cognition, an ongoing understanding of resonant phenomena.

Mammalian cousins, the cetaceans, returned to the oceans in evolutionary time; they use fluidic resonance in ways still mysterious to human marine biologists speculating about the "utility" of resonance in cetaceous society.[22] Resonance of fellow whales in these realms is deeply confused by human mining, oil extraction, shipping, and military action. Mysticete soundings of ocean depths and fathom-wide songs that can stretch over 24 hours (males are the singers, whether blue whales or humpbacks, but all mysticetes make social, community-connecting "calls") remain as poorly understood as odontocete "acoustic fats" (thought to propagate and channel returning sonar clicks to their inner ears). What is resonance *for* in these ocean giants? Navigating, finding mates, locating food? Likely all of the above, in the largest creatures on earth who parse the chattering ocean as a fully vibrational realm of lively relations.

Art by humans is also a place to explore such aqueous resonance. Imagine for a moment lying back into an installation of Max Neuhaus's *Water Whistle* (1971) in your neighborhood pool, ideally together with a congregation of water-slicked fellow participants. Neuhaus was a spokesman at the time for "avant-garde new music." In Michael Blackwood's documentary about the emergence of sound art, Neuhaus tells us about his interest in watery resonance as if it could constitute a new kind of *instrument*: "Many of the things that happen with wind instruments, with air, happen also with water, in water. I'm using water pressure to make sounds in water."[23]

esteemed colleague Stefan Helmreich. Italics are my gloss on the components, naming the fluid that usually goes without naming.

22 Decoding the mystery, marine biologist David Gruber claims to translate cetacean communication as language and through LLM (large language models) based on human abstract syntagms. His focus is primarily on sperm whales, for which see his CETI project which uses machine learning to store, compare, and tag cetacean soundings for human understanding. See https://www.projectceti.org/ (accessed October 22, 2025).

23 Neuhaus, speaking in Michael Blackwood documentary *New Music: Sounds and Voices from the Avant-Garde New York 1971* (2010). See https://www.youtube.com/watch?v=mgcGWVtXSCk (accessed September 30, 2023).

Fig. 5 and 6 – Max Neuhaus testing speakers in a pool for *Water Whistle*, first performed in 1971 at the NYC YMCA pool, with crowds enjoying the piece afterwards. Stills from *New Music: Sounds and Voices from the Avant Garde New York, 1971* (2011) © Michael Blackwood.

This was one way of exiting music composition: "I got tired of intellectual music games. To me, music is a sensual experience, and I wanted to get into a situation where other things were happening." The YMCA premier of *Water Whistles* in 1971 (as the title was pluralized by one *Rolling Stone* critic) was definitely a happening scene. Hoses were hooked up to cheap whistles, and as the water flowed into the pool in real-time the composer

moved valves that altered water pressure and hence pitches, "sound focusers" were used to aim the resulting vibrations in different directions within the water volume for the 15-hour duration of the piece. For Neuhaus it was "a pool of music;" for the reviewer Jonathan Cott it was "trance-inducing, mantra-flowing composite sound through which you swam."[24] What was the musical instrument here? The pool, its whistles, and the added water being pushed through them. Neuhaus celebrated the 6 inches of water that eventually overflowed the pool boundaries, a metaphor for how the composition enlarged the resonant properties of the space for submerged human bodies; the watery suffusion pulsed with continuous tones that interlaced, criss-crossed, and merged into a "resonating, slightly oscillating ten-note chord"[25] that many described as "dronelike" and pleasantly monotonous.[26]

Resonance usefully confounds the barriers we erect to separate a sonic outer world from an inner realm of quiet contemplation. "With your eyes closed," wrote the *Rolling Stone* journalist chronicling *Water Whistle*, "it seemed as if the music, like some sleepy language, were inside your own head."[27] It was, but also wasn't. This is the useful con-fusion that resonance brings together: inside + outside + within + all-around.

Fields

Who's to say whether or not the thumping and roaring that John Cage so famously describes at the heart of *Silence* (1961)[28]—experiencing the sounds of his cardiovascular and nervous systems while visiting Harvard's anechoic chamber—do not also resonate outwards? Once Cage returned to social spaces, these hums might have linked him to others, now imagined

24 Max Neuhaus, quoted in Jonathan Cott, "Max Neuhaus, the Floating Composer," *Rolling Stone*, August 19, 1971, 18.

25 Cott, 18.

26 "Actually, when you arrived down under, you heard 10 notes sounded simultaneously, each element of the chord varying in pitch according to the pressure of the water being forced through the respective whistles. […] Changes were very gradual, the sound emerging as a steady drone, rather than music with shape or line. It was quite pretty, too, if you like drones." Robert Sherman, "N.Y.U. Concert Wets Whistles for More," *The New York Times*, May 9, 1971, 61, https://www.nytimes.com/1971/05/09/archives/nyu-concert-wets-whistles-for-more.html (accessed 30 September 2023). This version of "Water Whistle" was offered in a pool at New York University's Hayden Hall from 9 pm to noon the next day, per Sherman.

27 Cott, "Max Neuhaus," 18.

28 John Cage, *Silence: Lectures and Writings* (Middletown, CT: Wesleyan University Press, 1961).

as throbbing bodies experiencing the winds and heart-pumping stresses of a climate changed. Who's to determine the limits of resonant oscillations in a *field of relations*? Joan Jonas insists on the way bodies can know other bodies in her new media work *To Touch Sound* (2024), offering a haptic title that imagines whalesong as a co-vibrational experience (collected and broadcast by the globally attentive *CETI* project).[29] These fathom-spanning low tones echoing in the deep, when first isolated by the military from the human cacophony of mining and atomic explosions, changed the culture of whale hunting.

Entering the field of relations automatically extends resonance beyond the human, opening conception to ideas about unheard but felt vibrations. If companion species dogs somehow sense human blood sugar levels before machines can—but not through any known chemical exudation—perhaps we should ask whether that shift is perceptible through canine attending to shared vibrational being (from an internal pulse of stressed fluids to an acoustic register that only a dog can hear).[30] Similarly, some tiny arthropods find their pollen source when the ripening plant's oscillating molecules speed up and emanate heat disproportionate to ambient temperature—a kinetic differential the plant has evolved to emit, and the bug has evolved to sense.[31]

29 Joan Jonas has worked with David Gruber and CETI (Cetacean Translation Initiative) since 2017; their most recent collaborative work appeared in Jonas's commission from the New York Museum of Modern Art, *To Touch Sound* (2024), a multiscreen video incorporating CETI footage with attendant sound of sperm whales.

30 I am grateful to the provocation of Hélène Mialet, whose anthropological work on the inter-species collaboration known as "Dogs for Diabetics" focuses on the scientifically unknown reasons for trained dogs' capacity to sense low blood sugar in diabetics 20 or more minutes before the glucose monitor in their veins can do so. While Mialet focuses on the nose, she was open to my speculation that olfactory chemistry is only one canine sense for attunement to their beloved partners.

31 See the work of evolutionary biologist Wendy A. Valencia-Montoya, who studies plant-insect symbioses. Valencia-Montoya et al. "Infrared Radiation is an Ancient Pollination Signal," *Science* (forthcoming, accepted Fall 2025). In this research, scientists are describing the relation between the genus Zamia (Zamiaceae: Cycadales), ancient dioecious plants (dimorphic between male pollen-producing cones and female ovulate cones), and its pollinators the Pharaxonotha beetles. The scientists report that the cyads differentially heat up in a circadian rhythm (afternoon male first, then in early evening female), to bring the beetle pollinators from the pollen source to the female receptor. Heat-detection is accomplished in the beetle through the most distal tips of the axillary antennae, which are enriched with sensilla. These vibratory relations are energetically expensive, yet evolutionarily conserved over at least the past 200 million years.

Field work and attunement to modest energies is how this science is done—and an embrace of resonance is part of that attunement. Signal thinking is reductive, sometimes necessarily so, to refine what may be a message. Those acoustics trade in frequency, Fourier transforms, algorithmic calculations in a mathematical brain, and the rule of neurons—these imagine a veritable deadroom for interiors primed to receive and decode. Reduction obsesses about signals, more or less well received, rationalized through Bayesian

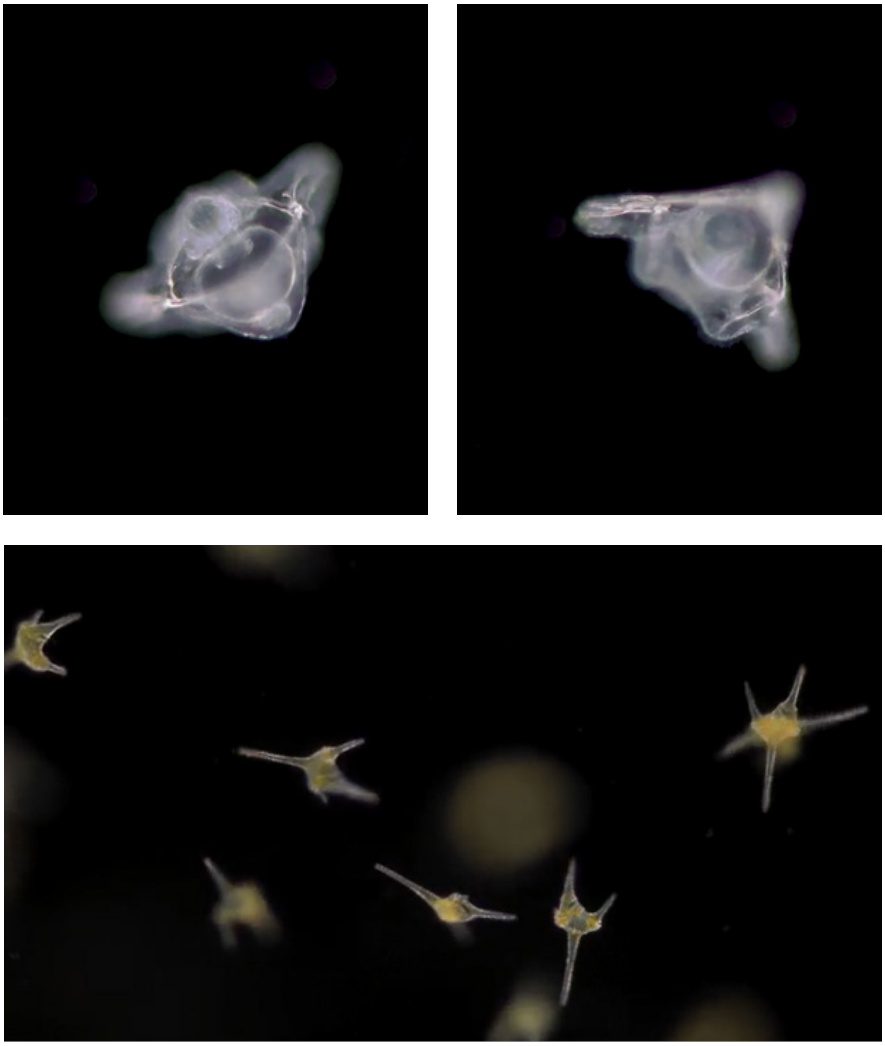


Fig. 7, 8, and 9 – Stills from Jana Winderen and Jan van Ijken, *Planktonium*, 2024.

calculations, evoking Claude Shannon's information science hieroglyph in which "noise" is mere interference. Resonance opens that black box to find everyone in it: dogs, whistles, whales, people, beetles, plants laden with pollen, and the innermost organs and fluids that resonate them together.

Sound artist Jana Winderen plays the field. She often deploys hydrophones in the ocean—not to resonate by emitting sound, but to eavesdrop on the already resonant volumes of our planetary seas. Clicks and calls of more-than-human species that ply ocean depths are her quarry, but also the waves, icebergs, and rainstorms that alter its surface. In her most recent collaboration with Dutch filmmaker Jan van Ijken, *Planktonium* (2024), the two created a film but also occasionally perform live, weaving van Ijken's microphotographic sequences of pulsating, dancing, and scintillating diatoms together with Winderen's "soundcomposition" (as she calls it) layered in real time.[32] The oceanic sounds are trans-scalar, ranging from the clicks of feeding shrimp and (imaginatively) the tiny collisions of silicaceous plankton, on up to the depth-spanning cries of the great leviathans, whose lowest frequency calls are believed to travel refractively in ocean channels for as much as 10,000 miles. If humans only awkwardly attend to sound underwater, whales have evolved over millions of years to use the ocean's miscible layers savvily for globe-spanning resonance. Boundaries between variable densities of ocean water (due to salt content and temperature differences) create the resonating conditions for SOFAR: **SO**und **F**ixing **A**nd **R**anging channels that allow whales' low frequency calls to bounce and propagate (e.g., resonate) without losing energy, for thousands of miles.[33] Encountering this field of relations, Winderen must edit out the growing cacophony of human industry in her recordings ("pile driving, seismic surveys, boat traffic") to create her immersive, literally oceanic soundscape, letting us temporarily bathe in the liquid reality of a watery planet.[34]

In all of these instances, resonance in the field complicates reductive abstraction. Resonating experience puts us inside a lively, wet, fleshy, sympathetic, membranous, emotion-laden, visceral, risky and potentially "invasive"

32 Performed at the International Documentary Film Festival in Amsterdam on 22 November 2024. https://www.janawinderen.com/news/planktonium-live-performance-with-jan-van-ijken (accessed 23 November, 2024).

33 "What is SOFAR?," *National Ocean Service*, June 16, 2024, https://oceanservice.noaa.gov/facts/sofar.html.

34 Philosophically-trained physicist Aleksandra Kruss describes this unfathomable assault in "Underwater Sound: Discovering a Liquid Reality," *Leviathan Cycle*, https://leviathan-cycle.com/essays/underwater-sound/ (accessed November 23, 2024).

situation. Winderen's sound art is decorous, letting us stay dry but immersing us in wet sonorities from delicate silicate clicks to the heart-wrenching echo of a SOFAR-propagated whalesong. But other forms of resonance can be experienced as violent—Goodman's *Sonic Warfare* capturing the essence of intentionally disturbing and assaultive fields. Going back to Neuhaus's "Water Whistle," one reviewer identified an invasiveness to the situation, feeling that the resonating tones could not be dodged, they penetrated the bodies submerged in the volumes of New York City pools, whether they wanted it or not (ears have no lids and resonance penetrates without permission).[35]

Fields are thus differentially experienced. For Lucier, such relational resonance suffusing the listener is the whole point of *I am Sitting in a Room*: "the point at which a listener loses understanding of the words and the speech has turned to music … My work is not on a flat two-dimensional surface—it's in the sound in the room."[36] In one 2014 iteration of the piece, some in the audience could hardly bear the 45 minutes it took for the room to achieve full resonance, while I experienced the composition as generous, meditative, and transcendent. It was a suffusive variant on Oliveros teaching me to fly. I mentioned to the composer afterward that I had been anxious when a cellphone ring entered the rounds of recording-playback, but roomtone eventually overtook the resonant whole. "The room heals everything," he responded.[37] An audist's anxiety becomes resonant cure.

The emergent properties of resonance have, in this essay's argument, permitted the switch from signal to field in our epistemological relation to vibration. Rather than compulsively decode sonic and subaural experience for ready meaning, resonance recommends recognizing attunement. Even the disruptive or unwelcome vibration (say, the violent grinding of magnets in an MRI machine that surrounds our blood-soaked bones with "magnetic resonance") is a signal in context: a field of experience, a vibrational probe, open to aesthetic reflection.[38] Rather than reduce the "input" to an "output"

35 "Describing Neuhaus' 1974 series of 21 installations called *Water Whistle*, in which submerged sounds were emitted in various New York City public pools, Al Brunelle wrote in Art in America, 'Whereas the sense of sight is generally fixed to what is external—'out there' in the field of vision—sound takes place within the ear, so it is more invasive and fraught with consequences.'" See Nancy Princenthal, "The Sounds of Violence: Max Neuhaus' Project," *Artforum* (May 1982): 70.

36 Alvin Lucier and Brian Kane. "Resonance," in *Experience: Culture, Cognition, and the Common Sense* (Cambridge, MA: MIT Press, 2016), 139–40.

37 Alvin Lucier, discussion with the author following the performance of *I am Sitting in a Room* at MIT in 2014, as part of the *Seeing/Sounding/Sensing* symposium at MIT.

38 See the work of composer and sound artist Arnold Dreyblatt. Evan Ziporyn, "Visiting

that is interpreted only as signal received, an embrace of resonance releases us temporarily from the normative mind-body, inside-outside problems of philosophy. We can expand our reflections to consider membranous exchange and transduction.

Accepting our always-entangled relations in and with the planet and framing them as *resonance* may be an incentive to limit human blasts/drones/roars/drills/whines from the media we share with the more-than-human (air, water, ground). Sound art is good for this activity of sensitization and transformation. Learning to fly, to suspend ourselves in room-tone, to assume the planktonic scale of aqueous being and becoming, is to expand wildly beyond the signal. Re/organized and knit together by vibratory experiences, we all become "the sound in the room," the arts resonating us into collectives, as the fluid creatures we are.

Artist Arnold Dreyblatt's Magnetic Resonances," MIT Center for Art, Science & Technology, March 19, 2013, https://arts.mit.edu/arnold-dreyblatts-magnetic-resonances/.

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Abstract

In the argument articulated by anthropologist Viet Erlmann in 2010, resonance opens us to different ways of listening and being and thinking in a world of oscillating matter. As Erlmann chronicled, the body's equipment (eye and ear, but also soul and viscera) have a history—most pointedly, the moment in which they were understood to be capable of *sympathetic vibrations*. Resonance enters us as music, sound, acousma, timbre, and subaural vibrations of viscera. The resonating subject was historically posited as possessing strings and hairs, hammers and drums, rods and cones—all of which resonate with various energies coming from the world. Still, despite the fact that much of the physics of sound developed around water experiments, those studying how the human body captured those resonant properties ignored all the *fluids* in human bodies (notably, different fluid densities deployed by the basilar membrane in the inner ear). The Helmholtzian "piano key" approach of the nineteenth century dominated how music and sound were understood well up until the mid-twentieth century. To understand resonance viscerally, other teachers would be needed. We would need Pauline Oliveros to compose music from the unpitched, uncoordinated, but moistly vocalizing co-resonating humans (*Teach Yourself to Fly*, 1970). We would need Max Neuhaus to appeal to our fluid interfaces by resonating us under water (*Water Whistle*, 1971). And emergently, we might want Jana Winderen reminding us that creaturely resonances vibrate in frequencies and places we need our techno-prostheses to access (*Aquaculture*, 2010; *Planktonium,* 2024). Such artworks, and the newer theories they stimulate, attune us to resonance as a key feature of our intradependence with a living planet.

Caroline A. Jones is Professor in the History, Theory, Criticism section of the Department of Architecture, also serving as Associate Dean for Strategic Initiatives at MIT. She studies modern and contemporary art, with a particular focus on its technological modes of production, distribution, and reception, and on its interface with sciences such as physics, neuroscience, and biology. Her essays on modern and contemporary art have appeared in journals ranging from *Artforum* to *Critical Inquiry*; she is solo author of several books and exhibition catalogues, and a co-editor of volumes that examine technology and the senses, art and neuroscience, and art history and history of science as parallel inquiries. Currently researching biologically-active art forms, she co-curated the 2022-23 exhibition *Symbionts: Contemporary Artists and the Biosphere*, co-editing the accompanying publication from MIT Press.

"What we dream of is already in the world."[1]

By Florian Dombois, Helene Romakin, and Berit Seidel

There is a wind tunnel on the roof of the Zurich University of the Arts (ZHdK).[2] It asks many questions, while also scrutinizing critically the times of early modernist era, when the blast of bullets and high-speed trains fascinated the Futurists in Italy, the Vorticists in England, and *Der Sturm* in Germany. These times characterized by the belief in unlimited progress and growth as well as by the idea of linear time have swayed their influence in techno-affirmative science and an according aesthetic expression. The modernist era pushed forward the speed of life no matter of the consequences or the feral damages involved. Within this momentum Western colonial thought based on extractivist practices and the separation of mind and body reached their peak. Today, looking back we are saying that this have led to a dead end, and point of no return. Today, we seek to unlearn, to degrowth, and to re-connect with people and our surroundings. Therefore, the wind tunnel at the ZHdK is designed for slow wind, known to aerodynamists as "creeping flow," searching for an alternative route in history.

The wind tunnel was created by the artist and scientist Florian Dombois

This is the site for our annual, international, four-day Wind Tunnel Festival since 2022. We invite artists, scientists, and the public to come together and to exchange ideas. Through open rehearsals, we spend time with one another, exploring new insights and moments of connection. The event begins with a dinner with our guests and our team, followed by two days of activities with the public. Free drinks and handmade sandwiches are served to everyone present. The festival concludes with a collective trip to Sils Maria in the Swiss Alps, where we fly sound kites in the worldwide wind alongside our guests as part of Florian Dombois' research project "Triple Instruments."[3]

While we have set a series of three follow-up themes for the festivals—*Wind Tunnel Festival* (2022), *Between Parafiction and Parascience* (2023), *Swirling Winds Won't Center* (2024), *Do You Believe in Social Energy?* (2025)—in the first edition, we addressed general questions about artistic research, including its topics and aesthetics. The second edition explored the prevailing ideas of fiction and science that dominate the discourse and examined how they can be challenged.

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as a site for transdisciplinary exchange and as an alternative (and commentary) space within, or better on top of the institution. It was built over the last ten years, step by step, with art students and assistants, first as a provisional lab and then more and more stabilizing on the rooftop. The tunnel is too big to be removed, and at the same time empty inside. As every wind tunnel is a mold, it claims space, but also always provides free room inside. Originally, it was an informal structure that was never intended to exist. Now, it holds its ground, oscillating between integrating into the institution and resisting its regulations. Meanwhile, it even has a room number: 8.CO2.

The tunnel is made from wood, plywood, and plexiglas. It is a circular, return-flow wind tunnel (the "Goettingen model"), with a diameter of 180 cm at its widest section. It spans a horizontal area of 6 x 8 m. Its open test section allows for experiments with laminar wind —turbulence-free airflow—within a 1 x 1 x 1 meter space.

The open test section also provides access to the inner area of the tunnel, where the wind and light controls are housed. This is also where a smoke chamber can generate incense, which is piped into the tunnel for visualizing the wind's flow. Sliding doors provide access to the white interior of the wind tunnel, to its windways, nozzle, engine, screens, and honeycombs.

In the third edition, we incorporated political and global aspects into the discussion. In 2025, we aim to further build our community and focus on topics surrounding resonance and the social energies that connect and influence us.

For each theme the guests are given a carte blanche of format, media, length, and the specific topic they would like to address. We encourage everyone to try out something different and experimental, something that could challenge the established academic and artistic presentation formats. The commons of the events are not necessarily the shared interests of one theme but rather in the ethics of how we encounter each other and the world. This idea we try to communicate and transform in long-term exchange and talks with the invited guests. During the public part of the festival, the audience is cordially welcomed but provided only little information of what is about to happen. We guide them through rhythmic rituals, avoiding any representational moments, so that everyone can go on board within this journey. Sometimes it is left unclear who are the hosts, who is the presenter, and who are the listeners— disciplines and roles, expectations and commitments are fluid and in flux. We share the moment, the experience, the emotions, and the thinking.

There is a certain warmth in the space—a connection between people and their surroundings. The gates are open at first, and they provide a glimpse into two different worlds: the rooftop garden, a retreat space, and the vibrant urban terrace overlooking the city. The wind tunnel is caught in between. Curtains are drawn from time to time, closing the connection to the outside world. Then only the vibrations from a passing train enter our bodies.

When people look from the wooden platforms above, down to the speakers, and the speakers look up, left, right, behind, and in front become all the same. The axes of vision are easily de-hierarchized. At times, it is not clear where the voices are coming from. These are fun moments of confusion. They bring a light dynamic to heavy topics.

It is a constant negotiation, of where the actual stage for the rehearsals is: in the breaks between the presentation, on the platform, inside the wind tunnel, in the garden, or on the terrace? Everything happens simultaneously and is equally essential. The situation encourages the in-between.

Later, there are these moments of care that provide ease, along with the homemade sandwiches with Swiss cheese, thick slices of bread, mustard,

The Wind Tunnel Festival brings together artists, architects, scientists, writers, and cultural practitioners to become a yearly platform for generating cross-disciplinary thinking and production.

Together, we examine methods and strategies of artistic research that resist binary oppositions between canonical objective knowledge and ethical, economic, sensual, emotional, and spiritual experiences and renegotiate the boundaries between disciplines. We interrogate the many strings of various knowledge systems connecting scientific and artistic research to generate new narratives on the basis of sharing and transdisciplinary co-learning. This involves engaging all the senses in activities of making and reflecting collectively, where simultaneities between tacit knowledge and critical practices might stimulate lengthy discussions.

and pickles, the samovar with the black tea, followed by a glass of sparkling wine. The wind tunnel is a space where unpredicted connections deepen over a bowl of borsch. There, we can laugh and cry together.

It is also something about the smell of the incense sticks, which are used to make the wind visible to the human eye, that creates a feeling of coziness. Not quite a room of silence or a rationalized art school… The informality of this space makes the conversations deeper, with no strings but a host of possibilities attached.

It is a space for gradual transformation that is so intense that people later think it is everything they have always believed in. You can't control the wind. Occasionally, it goes in many different directions all at once.

There are so many ambivalences and discrepancies one needs to endure; this feeling comes slowly from the gut. It takes courage to accept the in-betweens, some things on their way but not defined just yet.

Intermittently, worry fills the space that all of this isn't enough to make a change, but then hope from being together might spark more thoughts and crawl out like earthworms after the rain making the ground porous and fertile again.

We seek to cultivate a space and time of reciprocity until the wind tunnel becomes a market space for diverse agendas. We understand being together, exchanging our ideas and practices, building long-term relations as an embodied collective experience, a knowledge system of its own.

We aim to create a candid state of continuous experiment, empathy, and imagination at work. We gamble with uncertainties, which might accidentally go in the direction of our desires.

We urge the rethinking of artistic, curatorial, and scientific research and the moments of its sharing. We seek the energy in, and the power of, personal and subjective situatedness. The wind flows help us to be aware of our own limits and bias and to challenge them through new constellations, avoiding the characteristic traits of authoritativeness.

It takes time, preparation, and commitment to decelerate together with the wind and overwrite the old stories that lead to a dead end. With this in mind, we build a framework in which discussions can happen. We eat and rest together, and we go to fly with the wind.

How do we know what we know? In the wind tunnel, we resist the stasis of stagnant waters and defined forms of Western modernism.

The room is dark, the light is low. Thick molleton theater curtains muffle our sounds. We are inside the wind tunnel lab, and a spotlight illuminates Madafi Pierre. Her voice is both strong and fragile, as she mourns for her mother. "Soufflez moi, soufflez moi!" There are 30 to 40 of us, sitting close together. We can hear our own breathing, and we see our shared tears of sympathy reflecting in the dim light. The acoustics match the size of the room, which is 50 square meters. The vibrations stay within our bodies in form of goosebumps.

Then, we hear a train passing outside. The low frequencies reach us first, followed by the higher pitches–unusual for a black box setting. The smoke lines in the test section stir slightly, following the frontwave of the train emerging from the nearby tunnel. We hear two people deep

Our struggles are so present, sometimes they hurt. We expose ourselves by being vulnerable as a source of creativity and critical thought. We hesitate. We are concerned to find coherent ways to unlearn, to rethink, and to leave our comfort zones. We situate ourselves between sensing, labeling, and comprehending. What is the right measure for this?

Can we really unlearn all the biased thinking that sits so comfortably in our bones? How can we release the energies of informal and subliminal action?

Estoy feliz de que Lizeth Córdoba, una trabajadora social, y Manuel Muyuy Chasoy, un antropólogo del Pueblo Inga de Colombia, estén aquí en persona hoy, después de haberse unido virtualmente desde la selva amazónica el año pasado. Estoy contenta con el continuo intercambio con su comunidad.

in conversation passing outside, unaware that we can hear every word they say. Only a curtain and a roller shutter separate us from the outside world.

During the festival break, we step outside for a drink under the open sky. The bar is in front of the lab's entrance. People chat in the open air, and their sound doesn't accumulate—there are no reflections from walls, just clear, unencumbered voices. The sun warms our faces as we gaze up at the clouds.

A few weeks later, two colleagues from Graz, Gerhard Eckel and Daniele Pozzi, arrive at the wind tunnel with their experiment: a small speaker and a microphone, sending receiving 40 kHz and calculating the difference between the sent and the received signal. To their surprise, the wind in our test section produces no infrasound. The tunnel's wind isn't natural, it is laminar.

I am happy that Marine Gigandet and Janosch Kirchherr, both architects, continue their engagement of walking and talking as architectural practice and I am happy that you make languages flow between English and Spanish.

I am happy that Monica Narula, artist from Raqs Media Collective, is here today, because she taught me 20 years ago, that it makes a difference to say: it is not clear what the outcome will be vs. the outcome can be an exhibiton or a catalogue or a film or a music piece.

I am not happy that Samia Henni, historian, exhibition maker and educator cannot be here in person. But I am super happy that she nevertheless joins us later online and make the Sahara sand bring us messages.

I am happy that Madafi Pierre, researcher, playwright and artist, left Miami. Thorough in thought and witty in mind, she can open our hearts with laughter and bring us to tears with solace.

But the experiment reveals other sounds, ones that don't come from our controlled wind. We try a fast movement in one corner and hear it arriving a moment later in another. We wait. Again, a train passes, and we hear its front wave in our infrasonic setup. Then, the natural wind outside joins in. An incense stick helps us visualize, what we hear–its curls move with the sound, and its straight lines mark the infrasonic silence. The air feels like water sloshing in an aquarium.

The room is dark, we turn the lights off. We listen to the world. We sit, we stand, some of us lay in hammocks. Time passes. Then, together, we sing a song that brings us to tears. We sing loudly as we open the curtains. We sing as we lift the roller shutters. We sing as the wind flows into our lab from both sides, from the garden and from the city.

I am happy that Helene Romakin is here, and that it is not Tuesday, because Helene is the person that Tuesdays cannot join.

I am happy that Florian Dombois is here today because it means that the university's security services won't.

I am happy that U5 is here because it makes everything a bit more unpredictable.

I am happy that Moritz Ursprung is here, as he took the microphone and spoke out loud.

I am happy, that I am sitting in a room like the one you are in now.

I am happy to hear the sound of my speaking voice and I am going to read this text back into the room again and again until the resonant frequencies of the room reinforce themselves.

1 Rebecca Solnit, Hope in the Dark: Untold Histories, Wild Possibilities, 3rd ed. (Edinburgh: Canongate, 2015).

2 "Wind Tunnel," Zurich University of the Arts, accessed November 18, 2025, https://www.zhdk.ch/en/research/fspt/wind-tunnel-2013

3 "Triple Instruments," Zurich University of the Arts, accessed November 18, 2025, https://www.zhdk.ch/forschungsprojekt/triple-instruments-583068.

Florian Dombois (born 1966, Berlin) has focused on wind, time, labilities, tectonic activity, scientific, and technical fictions. As a professor he teaches at Zurich University of the Arts, Switzerland, since 2011.
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Helene Romakin is a postdoctoral researcher and curator working at Freie Universität Berlin and the Zurich University of the Arts (ZHdK).
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Berit Seidel (born 1979) is an artist and founding member of the artist collective U5. U5 opposes the idea of genius and challenges modernist ways of thinking, making and style.
https://u5.92u.ch

INTERVIEW

A Sediment Diversion for the Audible World

Ryan C. Clarke in Dialogue with Michael Nardone*

Introduction

Ryan C. Clarke is an ethnomusicologist and coastal geologist who studies surface processes, focusing particularly on sedimentation and stratification. These ever-shifting landscapes, according to Clarke, exist in a feedback loop with their sonic regimes. He theorizes how a territory's sonic repertoires exist as part of its topsoil, and how these repertoires contribute significantly to the formation of its geological strata, which in turn impacts what is sonorously and audibly possible on those grounds. With meticulousness and a fascinating capacity for drawing connections, Clarke studies these dynamics in the effort to comprehend the social-ecological composition of the present.

I first came upon his work through the essay "Reverse Hallucinations in the Lower Delta"[1] and its accompanying audiovisual mixtape *Care Forgot*.[2] These vital works articulate the historical palimpsest of the present and offer up future pathways for cultures of thriving difference, resistance, and conviviality.

As a starting point for our exchange, I proposed that we read Tiffany Lethabo King's *The Black Shoals: Offshore Formations of Black and Native*

* This dialogue is the third, augmented iteration of an ongoing exchange between the two interlocutors. Xenia Benivolski published its first iteration in *e-flux's* YOU CAN'T TRUST MUSIC, which she edited in 2022. The second iteration was published in Michael Nardone's *Convivialities: Dialogues on Poetics* (Vancouver: Talonbooks, 2025; with permission).

1 Ryan Clarke, "Reverse Hallucinations in the Lower Delta," *Rhizome*, May 25, 2020, https://rhizome.org/editorial/2020/may/26/reverse-hallucinations-in-the-lower-delta/.

2 Ryan Clarke, *Care Forgot: A Southern Electronics Visual Mixtape*, Vimeo, uploaded May 26, 2020, https://vimeo.com/422880874.

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Studies[3] as a way to propel our thinking on the imbrication of coastal geologies and cultural discourses. Our discussion moves swiftly from this initial point to consider delta processes, procedures of avulsion and extraction, the anti-imperial rhythm systems that Clarke calls "unleveed musics," and his remarkable, important conceptualization of the sediment diversion as a way to resist those forces that conspire to claim, contain, and foreclose the world.

The following exchange took place in conversation and in correspondence between New Orleans and Montréal during the winter of 2022 and the autumn of 2024.

— Michael Nardone

Interview

MICHAEL NARDONE: *In* The Black Shoals, *Tiffany Lethabo King thinks with the shifting geologic and oceanic formation of the shoal in order to situate and spatialize a methodological approach. The shoal is, according to King, "an accumulation of granular materials … that through sedimentation create a bar or barrier that is difficult to pass and, in fact, a 'danger to navigation.'" The shoal is a "shifty formation" that can "erode over time, drift, and eventually accumulate in another location," and due to this perpetual errantry and unpredictability, it "exceeds full knowability/mappability." "Materially," she writes, the shoal is "a site where movement as usual cannot proceed."*[4] *Beginning from this terrain and the careful navigation it calls for, King then approaches her particular subject of inquiry: a theoretical conceptualization of the relationship and dialogic traffic between Black and Indigenous studies in the Americas through a series of points-of-encounter just offshore.*

In resonance with King's offering, I wonder if you might discuss the relation of the shoal to the delta, describe what a delta is, geologically, and what this physical formation might offer up as we begin to think about the acoustics and the territory of the Lower Mississippi Delta?

3 Tiffany Lethabo King, *The Black Shoals: Offshore Formations of Black and Native Studies* (Durham, NC: Duke University Press, 2019).

4 Lethabo King, *The Black Shoals*, 2–3.

RYAN C. CLARKE: In the most basic of terms, a delta is a discrete bulge of the shoreline formed at the point a river enters an ocean, sea, lake, lagoon, or other standing body of water. The bulge is an accumulation of sediment as it is depositing more quickly than it can be redistributed via waves or tides. A paper from Jaap Nienhuis acknowledged that there are more than 11,000 deltas around the world,[5] but, for the sake of simplicity, I'll be imagining large rivers that in turn form the deltas that most people would acknowledge as such. This all happens, of course, if there is enough sediment in the river (a source) for a delta to form (a sink).

A delta follows a life cycle of around one thousand to two thousand years with a clear growth phase and deterioration phase. In the growth phase, a river has been "captured" into a stable place of deposition. As a result, the delta rapidly grows toward its own relative stability. But, as this bulge at the end of the river gets higher and higher, the river finds itself working harder to deposit the sediment at the top or even around this vertically accumulated earthen structure. So, the river shifts laterally toward another part of the shoreline, or avulses to another delta lobe. This begins the growth process for another area nearby to start its own new delta, but it also begins the death of the previously mentioned delta.

Shoals are dependent on deltas: a shoal is an abandoned outer structure that forms from detachment from a waning delta. When a delta is active, it spreads, or progrades, out into whichever body of water it's depositing into. During the abandonment stage of a previously active delta, tides and waves, once powerless against the mighty river flow, now have enough force to rework the nearby deposits. This leads to an erosional headland that quickly gets detached into what is known as a barrier island. With later submergence under sea level, this drowned or subaqueous barrier island is now understood as a sand shoal.

As a site of speculative understanding, deltas and their cycles are rich in knowledge reworked as Black methodology and logics: the nonlinearity of a delta is evident in its inherent procedure of avulsion (sorrowful songs avulse to gospel avulses to blues avulses to R&B avulses to jazz avulses to rock avulses to techno and rap, all producing their own discrete but interconnected lobes), both expanding but stacking beside. But what happens when structure denies avulsion, such as, for example, mass construction of levees along the Mississippi River after the Great Flood of 1927 or capitalism commodifying what it once thought of as noise (field songs) into extractive resource (modern

5 J. H. Nienhuis et al., "Global-Scale Human Impact on Delta Morphology Has Led to Net Land Area Gain," *Nature* 577 (2020): 514–18.

music industry)? Understanding modern Black infrastructure as having antecedent geologies, underground forms that inform what happens on the surface, can lead to many questions: how extraction of rich soils leads to physical degradation, how capitalism can be understood as a colonial mapping project and the inherent ephemerality of a delta refusing to carry permanence and to impose such upon it is violence (through delusion), how shoal production and its processes can be viewed through another production, Black cultural production, each with their own internal and industrial stressors reworking themselves within the tension of external forces.

An example: Cubit was an oyster fisherman in 1862 whose two daughters didn't want to take the Mississippi River all the way down to its terminus to get into an adjacent bay, Bay Rondo, so he cut a bank of the river and incidentally made what geologists now understand as "sediment diversions," a procedure used in the replenishment of a deteriorating wetland. His cut, now called Cubits Gap, was a mistake that ended up building a fully formed subdelta in less than fifty years. Cubits Gap can be seen as a knot of memory where, woven into its process of existence, we can elucidate further Black methodologies. Where can we find our next Cubits Gap?

All of this assumes Blackness as an inherently ephemeral (fleeting) depositional/erosional process and any violence enacted upon it is something akin to weathering (American South, in situ) or erosional (weathering involving transport, i.e., the great migration). What is gained and lost in these processes?

Acoustically, sound plays a pivotal role in this speculative coastal geology. As the shoal ruptures a framework of previously thought binaries between Blackness and Indigeneity, so do Black cities of the Delta. Mardi Gras season can be seen as a shoal, a tarrying or procession—a wading in the water. The opaqueness of a second line comes to mind, another bulge that avulses from Orleans Street to Canal Street between hurricane seasons and river years. How the humid sea-surface temperature of the Gulf waters lends itself to fog signals, often in lieu of lighthouses. To hear is to see down here. Sound is also a discrete bulge, not with hard lines but with felt ranges. The geology of the space informs those navigating and building on top, an antecedent geology of Blackness.

MN: *Thank you, Ryan, for establishing a profound ground for engaging this active terrain. You've introduced a number of possible directions to move in—sediments and lobes, procedures of avulsion and extraction, antecedent geology, mapping and the colonizing delusion of enforcing permanence, Cubits*

Gap, as well as an epistemology and acoustemology of the landscape—and I want to take up each of these points in turn.

I'm thrilled by your smooth linking of the delta's geological processes to its ecology of musicking. It's folded within your sentences, and I'm wondering if you can make more explicit how you understand this interrelation. And can you elaborate specifically with the example of the Mississippi Delta as to what forces or perspectives or incorporated structures (in both the geological and sonic-cultural senses that we are developing here) attempt to deny avulsion, to control the deposition of sediments, and to extract its rich soils?

RCC: For those who feel the Black Atlantic is a sturdy lens for viewing diasporic cultural movement and production, the Mississippi River is both a useful and proximal example (or a proximal being? partner? elder?) to find a through line between colonial and neocolonial stress mutation on a landscape. Nineteenth-century Czech composer Antonín Dvořák celebrated negro spirituals as "product of the soil."[6] In his overconfidence that the spiritual was truly American music of the land and not of state, he also hints at a metalanguage I find personally insightful in understanding music as a result of a physical, tilling process as much as it is an aural one. Field songs: a term giving equal weight to the land as the shouts given in, to, and of.

To veer away from Dvořák's Americentricity toward a more Mississippian understanding of Black cultural production, we can look to sorrow songs, spirituals, gospel, and predominantly something I'm broadly calling first-wave Black genres as *unleveed musics*. This is a genre where styles of song were pulsating responses overbanked into the southern plain with relatively minimal constraint or interferences on the music-making outside of the socioeconomic pressures for Black folks. This is to say the music industry wasn't signposting desire for Black musicians, these were folkloric tools that had more function than marketability. Both the pre-industrial engagement of Black music of the time and the relative freedom of the river to flood as it wished were obviously not wholly positive, but the understanding that these floods were needed to continue a fertile and healthy wetland was well known. It wasn't until the Great Flood of 1927 that some form of externally controlled infrastructure was instituted where, in two decades' time, the majority of the Mississippi would be leveed and dammed (damned), resulting in a riverine Catch-22: those living on its banks indeed now found annual safety from overbanking floods, but the land was effectively disconnected from the renourishing soil of the river itself, now

6 "Real Value of Negro Melodies," *New York Herald*, May 21, 1893.

rendered vulnerable by their newfound dependence on fallible structures. Such a structure also begins the era of modern Louisiana wetland loss, with the general consensus on it beginning in 1932.

To keep listening to the Mississippi River and understand its history as a knowledge system, not as a playful metaphor, one must consider Black cultural production alongside Western riverine control structures. For the Mississippi, it was Fort Randall Dam where, in 1952, the single largest decrease of suspended sediment load in the Mississippi River was recorded. For Black folk, it was the ratification of the race record in 1920 with OKeh Records releasing Mamie Smith's "Crazy Blues/It's Right Here for You," further transmuting the mass commodification of Blackness into the form of something manuel arturo abreu considers the "financialization of affect."[7] This moment is tangible evidence of epistemological bifurcations between Black people, their work, and the manufactured inherence of alienation with one's own labor. As an extension of their ontological fungibility through chattel slavery, the music industry pantomimes this series of colonial relations with incentivization of the race record in the 1920s, later with the Telecommunications Act in 1996, and with the Digital Millennium Copyright Act in 1998. Through governmental regulation, bending the material capacity for Black expression to be broadcasted writ large on its own accord. These structures contained what I'm calling second-wave or leveed Black musics: rap, Detroit techno, Chicago house, and jazz. Such sweet thunder proved too enticingly extractive to let be. Now, ever-new levees continue to restrict new topographies to be deposited. Spotify playlist algorithms not-so-quietly inform musicians what their music should sound like and how often it should be played. Silicon rhythm has no swing, too optimized and too quantized—not the meter soil people know. Manuel de Landa spoke to this in 1996 with respect to cultures attuned to the rhythm of the tropical cyclone:

> It is a perfectly rhythmic creature: it blows in one direction for six months of the year, blows in the other direction for another six months, and every sea-faring people in Asia that made a living from the sea had to live with the rhythm of the monsoon. The monsoon gave those cultures their rhythm. If you want to go that way, well, you have to go that way in the summer, then you get there and you have to wait for the winter to come back. You have to plan your life to that rhythm.[8]

7 manuel arturo abreu, "afterschool semester #1 manuel arturo abreu," Youtube, 7:15, uploaded October 19, 2019, https://www.youtube.com/watch?v=MaEW4YGtDtI.

8 Konrad Becker and Miss M., "An Interview with Manuel de Landa," Virtual Futures

From another conceptual perspective, the Mississippi lends itself to a framework built by George E. Lewis of the Association for the Advancement of Creative Musicians and professor at Columbia University—Afrological and Eurological systems. The Mississippi and the American South's geology is clearly interested in horizontality as a means to build and to sustain itself. Other concepts the Mississippi is interested in are ephemerality and movement, as noted within shoals or barrier islands discussed above. Delta waning and avulsion could be seen as geological kin to burning cultures in various Native American tribes, the understanding that life and death both sit in the same circle. The Mississippi, with its simultaneous avulsions and lobe building, understands this as a survival practice as well and to impose a delusion of permanence (levees) is to kill it (not a death, murder)—something so clearly seen in southern Louisiana wetland's trilemma of oil withdrawal, subsidence, and sea-level rise. Without the banks consistently flooding, there are no means to combat these unnatural adversaries. Leveeing, extraction, and their ilk impose a verticality or hegemony into an environment that is unconcerned with height.

The flatness of a second line, where there's no clear understanding of who's the dominant performer in a procession (possession), or a ring shout in Congo Square, or other Afrologics like call-and-response, repetition within a drum circle, the importance of improvisation as a cosmology (a position beyond music), or Black dance music where the end of a song is less resolution and more extended hand, only asking for the next song to continue to be in communion beside. These horizontal Afrologics are reflections between the music and the environment. But who's looking at who?

This deltaic understanding is close to Deleuzian rhizomes but not synonymous with them: a bunch of tributaries depositing roaming lobes connected through a shifting source network where the cyclical nature of the river channel captures results in multiple depositional centers. Interconnected like the rhizome, yes, but not interdependent nor centralized. Instead, an emphasis on shifting sites of dominant deposition as needed for the system's health. Something akin to what techno producer and NON Worldwide co-founder Melika Ngombe Kolongo, a.k.a. Nkisi, calls in DeForrest Brown Jr.'s podcast series *Techno at the End of the Future*, "a decentralized rhythm strategy,"[9] where as one rhythm gets subsumed by the mainstream

(Warwick, 1996), World-Information Institute, accessed December 5, 2024, http://www.to.or.at/delanda/intdelanda.htm.

9 *Techno at the End of the Future*, podcast hosted by DeForrest Brown Jr., episode 1: "London," Camden Arts Centre and HKW Berlin, September 2021, https://archiv.hkw.de/en/pro-

or fades away, another rhythm is already popping up somewhere else, ready to continue the goal of getting people together.

There's something more direct going on in the term *strategy*. To speak explicitly, it's a literal life-saving pattern. A pattern of life no different than a drum-framed African cosmology.

Music, and a lot of the information inside of music, have been really worthwhile to Black people. I think it's what drew us together through most of colonialism. It's what held us together during the Civil Rights era. Encoded theories of liberation inside songcraft. Hymnals performing as camouflaged text to better understand what it meant to fight for our lives. Notes to pass on and remember. Even now, Katrina, and memories of Katrina, are embedded in songs still. How did we survive? The archive is woven by and between the tones.

How can we contribute to a counterarchitecture while engaging in traditional knowledge systems? Trying to inform the perils of human-induced collapse into nonvocal forms of understanding is incredibly important. We must learn to respond appropriately to the tones of life. This quickly becomes a matter of: How do we better value ourselves? How do we better hear each other? How do we take care of each other?

MN: *I'm pausing to think with this phrase of yours,* unleveed musics*: music made by those who negotiate the modernizing imperial fantasy of control over nature and natural (rhythmic) systems, who know the protection promised with such "control" is not and will not be extended to them in the duration of social crisis (*when the levee breaks*, via Kansas Joe McCoy and Memphis Minnie, they will* have no place to stay*), who adapt their lives in the face of recurring floods and the resulting social crises and thereby imagine a mode of existence in their expectation so as to survive and thrive beyond them. And to continue your connection of topography to music-making: the word* levee *comes from the colonial French of the Mississippi Delta, from* lever, to rise*; so, an* unleveed music *is one that sits below,* with *and* in *the shifting conditions of soils and sediments. Such musics—in the perspectives and (horizontal) forms of composition they articulate—bear the traces of these negotiations, imaginings, tactics.*

In thinking about a "decentralized rhythm strategy," your question from above, "Where can we find our next Cubits Gap?" begins to resonate more resolutely in my mind now. The sediment diversion is an act in rhythmic

gramm/projekte/2020/on_music/podcast_on_music/techno_at_the_end_of_the_future.php.

listening with the Delta and its cycles. It is a way of perpetuating horizontality—a horizontality against the militarized will of the petrocapitalist state and its proponents, its desire for a verticality sustained only on its own terms, and the settler-colonial modes of appropriation and accumulation that are its premise as well as its ongoing effect.

So in thinking about these "horizontal Afrologics"—the uncertain, shifting lead in an ad hoc ensemble and the ethics of improvisation, to name only two of the facets you state above—and how they are reflections between an environment and its musics, I'm wondering if you might speculate how these praxes in the music of the lower Delta might reflect back to thinking with the geological and ecological? Is it too much to ask of an unleveed music that it might cultivate some mode of resistance against that trilemma you name above of extraction, subsidence, and sea-level rise?

RCC: I'm unsure if unleveed music can *do* anything outside of getting people together. It's like asking water to do anything other than flow. It's the structures that surround the music that are its refusal, preventing it from doing much of anything other than being a manipulated vector toward unsustainable accumulation of wealth and power.

Two proposals after the Great Flood of 1927—the Mississippi River and Tributaries Project (1928) and The Flood Control Act of 1936, respectively—brought about an almost complete leveeing of the Mississippi River, with every theoretical drop ending at the mouths of the river. With this confinement, any pollutant that finds its way into the river is there until it reaches the Gulf of Mexico. Because we've assumed levees as an inarguable fact of life, there's a subconscious cultural understanding that it's no emergency that a metric ton of nitrogen makes its way into the river annually. And because there's no floodplain to distribute such sediments, the Gulf of Mexico now carries an oxygen-depleted (hypoxia) zone of 6,952 square miles, mapped as of 2019. Modern industry—of which I've named southern music and the engineering of the Mississippi as two examples that are spatiotemporal kin—has attempted to lead us to the conclusion that we have created at a scale that we can no longer destroy. Modern industry has produced a sort of atomized pseudo-relationship with a prerequisite for consumption (for example, the performer-audience, desired object-buyer, artist-critic, river-land, nature-extractor) when, in reality, relation and its sustainability are where we should begin and end. For the modern music industry, relationality barely exists outside of the "related artist" tab, for ads to be placed in front of us, as long as they're keeping us busy with the nice sounds we seem to like so much. There is no more nature, meaning relation,

in music writ large, outside of the usual controversy and mutual followers. Maybe the issue starts with "writ large" before "music"?

As an *in situ* example of a historical response to the then-budding musical infrastructure we're grappling with today, in 1931 Louis Armstrong cultivated an oft-forgotten baseball team in New Orleans that was nicknamed the Raggedy 9 because of their tattered uniforms. He gave them fresh clothes and called them the Secret 9. Outside of the revitalized jerseys, he also taught many of them how to play in a band and incorporated them into the jazz circuit.[10] This cross-pollination was happening throughout the southern jazz circuit, with Count Basie and Benny Goodman soon following suit. Another feature of this team was that every member was also a member of the now-famous Zulu Social Aid and Pleasure Club, a club of which Armstrong was also considered a member. This example is a short but illuminating understanding of what New Orleanians know as benevolent association. Local benevolent societies were a response to a massive uptick in the mortality rate in Louisiana in the late nineteenth century, with New Orleanians organizing institutions for their own benefit. As noted by Claude F. Jacobs, these societies, rather than the Black hospitals and centres, were the dominant forms of health care, with a mission "to socialize and help each other with illness and death, especially during the recurring epidemics in New Orleans,"[11] covering costs for funerals, second lines, and even procurement of the tomb and plot in many of the city's aboveground cemeteries. Founded in 1844, the Dieu Nous Protège Benevolent and Mutual Aid Association "actively helped slaves purchase their freedom."[12] More recently, these benevolent societies are predominately a cultural preservation project, with many of the social clubs now most prominent during Mardi Gras, although they continue to operate year-round to organize social care.

What Armstrong and jazz performers in that era were doing with opera houses, lounge rooms, and pitching mounds follows the same logic as the marshland does when reacting to sea-level rise through a process known as hysteresis. Hysteresis is a concept some of us feel every day in our homes. Air conditioners use hysteresis: if you set the desired temperature to 71 de-

10 See S. W. Pope, "Decentering 'Race' and (Re)presenting 'Black' Performance in Sport History," in *Deconstructing Sport History: A Postmodern Analysis*, ed. Murray G. Phillips (Albany: State University of New York Press, 2006), 147–77.

11 Claude F. Jacobs, "Benevolent Societies of New Orleans Blacks during the Late Nineteenth and Early Twentieth Centuries," *Louisiana History: The Journal of the Louisiana Historical Association* 29, no. 1 (1988): 24.

12 Jacobs, 24.

grees Fahrenheit, the air conditioner will never actually stay at 71. It will cool down to 70 degrees and then turn back on once it heats up past 72. Stability is not static but is constant dynamism in response to the world around you. The American South is an embodied tome of almost hysteric hysteresis. To live there is to constantly respond with the dynamism of the earth underneath, where the social and geological often feel like they are emitting from the same source. And such deltaic sociality, discrete but interconnected, can carry neotectonic change.

These are Cubits Gaps to me. In 1862, Cubit's daughters saw the amount of resistance it would take to travel into Bay Rondo, and so they thought beyond a concept they *knew* worked and imagined something that *might* work. It was this imagining that led to the main way geologists fight wetland loss over a century later. Cubits Gap as a historical moment for modern sedimentologists to then engineer sediment diversion might find its analog in jazz's benevolent associations. And this is not to say halftime shows are the goal, but the horizontal intermixing between audience-performer-club member-neighbor could be a useful and wieldy tool to find our own gaps in the infrastructure, which cannot be dismantled on its own terms. Why would it allow itself to be? Hopefully we can produce enough gaps in the infrastructure to start to grow land. In Louisiana, that's only happening in one place. The Atchafalaya Delta, about 135 miles from the mouth of the Mississippi, is building soft wetlands at a rate of one square mile per year. The Atchafalaya Delta, sourced by a river of the same name, is an offshoot of the Mississippi but was given thirty percent of the Mississippi waters for it to claim as its own. Less leveed than its much larger sibling, it has found stability between its own deposition and human induced wetland loss effort previously mentioned above. A square mile a year may not seem like a lot, but for a place where the law of the land is decay, growth is hope. And since nature is one of the few things we can learn from that isn't each other, finding reflection in the world around us might be worth our while. For me, it's here.

MN: *Your articulation of "benevolent associations"—as a particular cultural form that arises in the cultural-geologic specificity of the Lower Delta, but also more generally as a social concept, a practice or a mode of relations that can extend from there—is stunning. It returns me to your work* Care Forgot,[13] *which documents a conviviality that I see as a kind of Cubits Gap, as you*

13 Ryan C. Clarke, *Care Forgot*, visual mixtape, 2019, https://vimeo.com/422880874.

theorize it, in the way that it charts a path toward different forms of being together that seem all too foreclosed in our present moment.

So, I'm curious if you might describe what you see as happening in all that you've assembled in Care Forgot*? What are the "benevolent associations" there, and how are they a kind of Cubits Gap?*

RCC: Watching the film after editing it about five years ago, I see a sort of mathematics at play. A geometry happening. I think there's a resonance going on with what predicates the event that produced Cubits Gap and what predicates the event of a second line or Mardi Gras that might be understood as a reaction to spiritual-historical confinement. Confinement of alternate culture, confinement of alternate life similar to a confinement of riverine systems. These phenomena can be seen as breaks—whether it's in Black life emerging through slavery with the Code Noir, which then brings the ring shout and the drum circle to return, like cosmological stowaways, which then allows the ring shout to straighten out into the procession. Or to reference Cubits Gap—which would initially be determined as a crevasse splay—a bursting out into a new channel, a new sub-delta. Both insist on the recognition and the acknowledgment of the spatial relationship among themselves and the world of various objects around them. Rather than assuming architectural solipsism of the levee and city, these are the architectures of the Earth we are insisting on. New Orleans specifically is a place of paradox, as the city has been built into a casket constructed by levees, it's important to continue to see what ideas emerge from a place that has had a superimposition of life and death upon it for almost a hundred years. And has dealt with Western epistemology longer than the land around it, as it predates the United States as a thought.

Over time, the levee as a gesture of control has begun to signify disillusionment with the Western world for many of us down here. We see the inherent ecological collapse these structures facilitate—this short-term environmental amnesia, as we now have multiple moments in our history of how levees have failed us. Black and lower-class communities especially. St. Bernard Parish in 1927 and the Lower Ninth Ward in 2005 come to mind. And so, when I see things like Carnival, or environmental engagement that is more about being in circulation (across time and space) rather than walling ourselves off from the reality of the locality, I recognize that as an affirmation or reaffirmation of nonhegemonic relations.

What does it mean to engage with something geometrically? It is to acknowledge the spatial relationship among various objects.

From there you begin to develop into self-organization, or self-adaptation. For instance, the way a delta develops is the spontaneous formation of a pattern. A dendritic, tree-like sprawling. But then, that pattern is already adapting to the pattern it's set out as it continues to develop. That's where you get self-organization. Pattern change in a complex system where the pattern is adapting to the very behaviour it created. This is how I'm seeing the development of New Orleans culture (and Black culture, more generally), where you can get Blues to aberrate into jazz, and jazz aberrating into R&B or rap or techno, as it continues to sprawl away from its initial region. Making a way out of no way might be perceived as simply chaotic; I think it's something I might understand as deterministic chaos. We're setting up a culture to find your own voice. Everyone is speaking and doing their own thing, which brings to mind another musical phrase, heterophony. Found in the Black church before it was a traditional jazz concept, before it was the foundation of free jazz. You can hear all three in Albert Ayler's music, for example. Going back to the congregation during hymns, where everyone would solo alongside the choir while the pastor led the tune. You could understand that as a group solo. Black music is, in essence, a continuous group solo. I think that's what all of these "Cubits Gaps" are tending toward. What's your own solo? What's your break?

MN: *These second lines and benevolent associations, this heterophony of the group solo that you describe so wonderfully—I think of them, as you stated it earlier, as a "counterarchitecture." You state it again: "This is the architecture we are proposing."*

I can recall feeling this exact statement in my body in times of uncertain convergence with others. The first example that comes to mind is the 2012 student protests here in Québec, where it felt like—in being out on the streets together throughout the spring and summer—that we were redefining the city, how we interacted with it, how we cohabited it with one another. Those manifestations and actions felt like a proposal for the city that we were enacting each night.

RCC: I think counterarchitecture is often a counterproposition. How can we show you another way to be together? What's another way we can *be* each other *with* each other *for* each other *about* each other? How do we listen to one another?

This is why I really have so much love for the Black music continuum—the music is only possible through listening. We talk so much about improvisation as if it is this pure, exogenic heat release, as if all one is doing is

releasing. Yet there's so much that is about taking in what's around. There's so much circulation, so much relation. It's not simply about spewing what you have to say. You only have something to say because of what you've heard and because of where you're from. If you refuse that, then you've gone mute. You're gonna be stuck.

I love parades insofar as they do rhyme with the strike, the uprising, the protest. They assume and enhance the form of embodied congregated resistance for when it's time to do so. They get your body primed for what it means to be in the streets and to speak up for yourself. I think the tradition of Black music is a sort of technology of a "generative grammar," to reference Chomsky. Black musical structures and societies give you the tools and the parameters to learn how to speak for yourself. Like the twelve-bar blues or general song pattern in jazz of head, verse, chorus, verse, coda. People will say how musicologically rote a lot of jazz or popular blues is, but the magic is in how it prompts one to reach unbelievable degrees of freedom surrounding ornamentation and aberration. What's even more exciting is how you can see this formality in the material and immaterial cultures around Blackness, such as with the New Orleans shotgun homes. The same stakes are at play. In this way, I think New Orleans applies a question to all the inhabitants of the city: Where is yourself in all this chaos, and how can we find each other in this madness? Here lies a city of echolocation.

So, to return to *Care Forgot*, what I really see is an encryption of collective meaning refusing the constraints of linearity, an inscription of a suppressed history of spatiality. Of togetherness, an ontological graffiti culture on a Western cityscape at play that tries to make sense of the questions above.

That's why in the video you get this flow of black-and-white imagery together with more modern-day ones. The sounds are mostly from my own field recordings, sounds that I've collected from my friends, and clips that mean a lot to anyone who has lived in the city for the past twenty years, I'd say. They would send me these voice memos as they walked around the city during Mardi Gras. Listening back, the footage begins to showcase a sense of collective autonomy. I wanted to use the sounds that I was hearing. I don't think of it, necessarily, as "found footage," because there's always in my ear a kind of coloniality in that idea. I "found" it, I "discovered" it. There's something of the romantic and the journey of the individual hero in that idea. When in reality these are shared songs, shared voices, shared notes. I wanted *Care Forgot* to be a document of a series of spatial and temporal relations.

Which is why I'm saying it's mathematics, as that's all that mathematics is: a documentation of a series of relations. What I see in *Care Forgot* is

the closest thing that we can do to modelling after nature, expressing unbounded life. Which is why I'm interested in the idea of Blackness being a sort of geology. The piece is ultimately a moment showing an ongoing series of models of the generative capacity that nature performs and how we can embody that nature to share it between each other.

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ARTICLE

After Alerts

Katherine Behar and David Cecchetto

Before we begin, we offer this speculative schema:

1990s	2000s / 2010s	2020s
Sonic alerts on landlines and cellphones	Sonic phone alerts (modeled after landlines) → Vibratory phone alerts (modeled after sonic)	Silent phones (with or without vibrations)
User as member of the public	User as consumer → user as producer (e.g., content creator)	Extracted users
Commons (individual)	Demographic polarization (hyper-individuation)	Isolation (post-individual)
Affirmative action	Identity politics	DEI/Inclusive excellence
Data connectivity	Data collection	Data discorrelation
Web 1.0	Web 1.0 → Web 2.0	Web 3.0
Gen X	Millennials	Gen Z
Non-com	Ad revenue	IPO
AOL, Netscape, Apple, Microsoft	Google, Facebook, Amazon, Twitter, Netflix	Apple, Microsoft, Nvidia, Alphabet, Palantir, Meta, Alibaba
Engagement as participation	Engagement as transaction	Engagement as extraction
Speech (human sense and human interpretation)	Chats (human sense and human interpretation)	Tasks of recognition (machine sense with human interpretation)

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Email conversations	Instant Messaging	Stories
Surfing	Bingeing	Pop-up management
Friction-free / Smooth	Friction-free / Smooth	Frictional / Striated
Personal computers	Cellphones and smartphones	Wearables (including phones as failed wearable tech)
VR	AR	XR
At terminal	In screen	In world
Democracies	Casinos	Bureaucracies
Cageian quiet	Dow Schüllian disconnect	Non-agential appification
Concentration	Distraction	Interruption

Remember this?

"Please silence your phones. The performance is about to begin." Sitting in the theater with the lights dimmed, this announcement signals a moment of attentive transition: the quiet cacophony of the audience having been suitably silenced, whatever follows will reward heightened focus.

Or: A comedian heckles an audience member who has just been singled out by the tinny, compressed version of "Don't Stop Believin'" crying out from their coat pocket.

Or: A student goes ghostly white as, surrounded by 200 of their peers in a biology lecture, an unmentionable YouTube video starts playing out loud.

Or: A synthetic shutter "click" issues from a smartphone camera as an audience member captures a particularly precious and delicate moment of a theatrical monologue, having forgotten to silence their phone.

Or: Taxiing to the gate and switching a phone off airplane mode, an overlapping cascade of messages comes in faster than their "dings" can echo, as a full conversation that unfolded during the flight arrives stumbling on top of itself, all in one go.

Or even: the humming buzz of a phone case skittering across the burnished top of a conference table, silenced but still vibrating insistently as a call comes in, breaching the performative perimeter of its "do not disturb" settings.

While phones still go off in fumbled-for bags with semi-regularity at predictably inopportune moments, these out-loud vignettes are part of a sonic ecology on the wane. Whereas an iconoclastic Gen Xer might have

designed their own ringtones to signal their difference from the corporate morass of big tech, even that decision is now revealed to be in concert—literally—with that which it would oppose. Anyone born after 1995 just keeps their phone on silent, right?[1]

How then to characterize the current sonic ecology of always-already-silenced phones? How do we listen to the silence of phones, and what do we learn from doing so? These are enigmatic questions, but the distributed character of listening means that the paradigmatic object of listening is no object at all. And so, listening offers a suitable approach because it is always aimed at more than one thing, attuning to distributed agencies that take shape as patterns that are themselves caught up in the worldings of specific situations. Constitutively, the remit of this practice exceeds anything as simple as what sound "communicates."[2] Listening is not simply the addition of attention to physical hearing (*contra* its quotidian use). Instead, it is a delicate looping of comings and passings that pattern incipient subjectivities by relaying between affective and experiential dimensions.[3] To listen to the silence of smartphones, then, is to tap into technoculture's choreosonic perceptibility, the ongoing movements through which worlds become the felt selves that we are (and vice versa) independent of our awareness.[4]

Our method joins ample precedents: what is Debussy's famous declaration that music is the space between the notes if not an implicit injunction to listen for a musicality in the coherence of a collective temporal distribution rather than in any particular moment? Further, and more evocatively, poet CAConrad describes a practice of "flooding their body" with field

1 We are grateful to Fee Christoph for this observation.

2 The previous phrasing is borrowed from Nathan Snaza who, citing David Cecchetto, takes up the question of listening in conjunction with scholarly discourses on the concept of resonance to make the point that listening is "about how distributed agencies take shape, as patterns in the ongoingness of worlds, in situations of relation, of touch, of haptics that include the sonic precisely as a field that exceeds anything that might […] be as simple as what sound 'communicates.'" Nathan Snaza, *Tendings: Feminist Esoterisms and the Abolition of Man* (Durham, NC: Duke University Press, 2024), 89–90.

3 Patricia Ticineto Clough describes listening as a "delicate looping" of comings and passings that "relay between the affective dimension and experience [to] pattern […] an insipient subjectivity." See Patricia Ticineto Clough, *The User Unconscious: On Affect, Media, and Measure* (Minneapolis: University of Minnesota Press, 2018), 63.

4 Ashon Crawley coined this phrase to capture "how worlds take shape in and as feelings" that set "us in various kinds of motion" that "move through us, and as us, even when we don't 'know'" it. Ashon T. Crawley, *Blackpentecostal Breath: The Aesthetics of Possibility* (New York: Fordham University Press, 2017), 90.

recordings of the natural environments of extinct species. Notably, they do not situate this as a nostalgic practice but instead as a means of loving the world in its presently mediated forms.[5] In these and other cases, listening figures a pathway that feels—even if it can't register—that which is being experienced phenomenally without being explicitly sensed. This is not merely a result of limited sensorial sensitivity to the restricted range of audible frequencies, but also and more profoundly it stems from scalar constraints such as the broader distributions of cultural tendencies we are tracking here through silenced phones.

If listening involves attuning to such epistemic registers, understanding this new sonic context requires asking how the broader ecology of phones has changed, particularly in relation to attentional economies. An alert, after all, does what it does to call our attention to the fore, superseding something else. But to *listen* to these alerts is to supplement the autonomic responses that they individually elicit with an attention to the conditions and suppositions that such responses entail—affectively, subjectively, and socially. And this is all the more the case in their contemporary silence: to listen to the silence of silenced phones is to attend to the inclusions, exclusions, tempos, rhythms, and textures of a particular register of contemporary sociality.

After Distraction

It's tempting to theorize the diminished presence of the alert as an attempt to quiet the oft-lamented culture of distraction associated with internet culture.[6] Certainly cellphones and their smarter cousins have contributed to

5 CAConrad. *Amanda Paradise: Resurrect Extinct Vibration* (Seattle: Wave Books, 2021).

6 The association between internet culture and distraction surfaces across numerous fields from child development to media ecology. For an example of the former, see numerous articles around parenting (particularly since the COVID-19 pandemic), such as Erin Walsh and David Walsh, "Why Digital Distractions Can Make It Harder for Kids to Focus," *Psychology Today*, February 18, 2022, https://www.psychologytoday.com/us/blog/smart-parenting-smarter-kids/202202/why-digital-distractions-can-make-it-harder-kids-focus. In the latter context, see Sherry Turkle's oeuvre in particular: Sherry Turkle, *Reclaiming Conversation: The Power of Talk in a Digital Age* (New York: Penguin Books, 2015). See also Dominic Pettman's diagnosis of a substantive change in online distraction in the particular setting of social media: "Distraction is no longer a gesturing *away from* that which disturbs … It is not to 'create a distraction' [from something else] Rather, … the thing designed to distract … has merged with the distraction imperative, so that … representations of events are *themselves*

an audio landscape of audible distractions. Prior to their ubiquitous pings, such constant hails would be almost inconceivable to most of us: as with the development of a sense of propriety around when to answer a ringing landline (or not), we had to learn practices and principles of attention in the face of this new clatter. Yet distraction presumes an object of concentration and a subject fundamentally capable of concentrating on something somehow. When we silence a phone, it is because we know what we want to attend to, so we make decisions in advance to secure that goal (this is what each of the above anecdotes demonstrates).

In this sense, the silence of silenced smartphones is fundamentally different from the silence that preceded the possibility of such pings, like the silence of a home is different before and after the death of a loved one.[7] Whereas an earlier silence contextualized instances of distraction (i.e., pings), something different is sounded today. After all, even with so many phones now silent, we still can't get anything done. We may be less distracted, but we feel more frustrated by something else in play.

And so, our speculative hypothesis: rather than our intentions being subverted by distractions, our attention today is focused but constantly *interrupted* by an unrelenting onslaught of minor barriers that mis- and redirect our action, diminishing our interactive agency.

Here's the scenario:

> We are trying to make a dinner reservation. We open Google Maps and search for nearby restaurants. By way of Google Maps, we visit a likely contender's website. The website content is blocked by a banner that asks us to accept cookies or change our preferences. We first elect to change our preferences and then proceed (on principle) to decline non-essential cookies via individual toggles. However, to view the menu, we need to leave the website and download the restaurant's proprietary app. This requires a visit to the App Store and a sign-in. We must first open and enter credentials in our password manager, which then populates our App Store login information, permitting us to download the restaurant app. Once the app is successfully

used to obscure and muffle those very same events." Dominic Pettman, *Infinite Distraction: Paying Attention to Social Media* (Malden: Polity, 2016), 11.

7 While our aims and argumentation are different, this observation follows from N. Katherine Hayles' (and others') agenda-setting work reconsidering digital reading practices in terms of different (if often overlapping) modes of attention. See N. Katherine Hayles, *How We Think: Digital Media and Contemporary Technogenesis* (Chicago: University of Chicago Press, 2012).

> installed, we tap again to open it and are prompted to make an account for which we must switch over to our email app to await a one time use code. When it arrives, we enter the code in the app to complete our account registration, and upon doing so we are immediately greeted by offers to subscribe to alerts and share our location, both of which we tap to decline. We can now enter the app to view the menu and confirm that this is in fact a place our dinner companions are likely to enjoy. However, to make the reservation, we are redirected to a third-party app through which the restaurant manages bookings. Fortunately, we already have this app, but it requires another password manager sign-in. This leads to dual-factor authorization (2fa), so we await a text message. We receive the text message, and we then tap to automatically populate the one-time use code sent to our phone into the appropriate field in the reservation app on the same device. Finally, we use the app to select a day, time, patio preference, and the number of people in our party. We make our reservation. Having done so, we receive an automated text message confirmation of our reservation details to which we must reply "1," confirming the confirmation.

Throughout this tedious twenty-eight step transaction, not once were we distracted. Rather, the heightening frustrations reinforced our focus. Had a text message arrived in the midst of this exchange, we would certainly have ignored it. With the escalating anxiety of constant interruptions intervening against our intentions, a mere message could not possibly distract us. Instead, we remained dedicated to accomplishing a single task. The mounting aggravations increased our resolve, making us less prone than ever to distraction. This is both sonically and affectively different from the distractions of ringtones and vibrations.

Silenced phones don't make sonic space for concentration, then, but are a symptom of a larger attentional shift from a culture of distraction to one of interruption. Distraction had its pleasures: the black holes of binge-watching, the hours lost to triumphant fact-finding in the obscure niches and outer reaches of the interwebs.[8] Such indulgent excursions are increasingly a thing of the past, with the depth of previous internet dives pancaked

8 Writing about distraction in digital culture, William Bogard demonstrates how "in countless forms, [distraction] is implicated in the production of life's pleasures (the French meaning of the term is close to 'entertainment' or pleasurable 'diversion')." William Bogard, "Distraction and Digital Culture," *CTheory*, October 5, 2000, https://journals.uvic.ca/index.php/ctheory/article/view/14600.

into the equivalent of a discount shopping center.[9] Stuffed with no-name schlock, the individuality of brands (no less of people) has no meaning and promises no rewards. Now, far from rewards, our online experiences promise punishment. Experiences online are terrible for being peppered with myriad interruptions: from pop-ups to sign-ups, 2fa to location sharing, click-throughs to cookie consents, and more.[10] To dig out the tail of a reference—never mind to make a dinner reservation—requires surmounting an inestimable stack of prerequisite micro-interactions (i.e., clicks) that stands in the way of the task at hand and stalls the smooth sailing of what once was surfing.[11] These interruptions shift the delay of accomplishing a task from a quantitative problem to a qualitative one. That is, what it means and feels like to go about a task is itself changed by virtue of the impossibility of performing it without interruption.[12]

Perpetual awareness of inevitable interruption is the only thing that carries through actual interruptions uninterrupted.

9 Discount, because the destructive pleasure of consumerism is gone. Consumer culture worked via brands to tie purchases to identities, with the specialness of an object standing in for a deeper lack residing in each of us. Today's internet operates at one step further removed, seeking knock-offs of the things that would fulfill this function, sought after cynically without even the hope that something deeper might be fulfilled (in this light, we appreciate the perversity of Amazon naming their warehouses "fulfillment centers.")

10 Cory Doctorow evocatively coined the term "enshittification"—selected as the 2023 Word of the Year by the American Dialogue Society—to capture the tendency of platforms to decline. As he writes, "Here is how platforms die: first, they are good to their users; then they abuse their users to make things better for their business customers; finally, they abuse those business customers to claw back all the value for themselves. Then, they die." Cory Doctorow, "Pluralistic: Tiktok's enshittification," *Pluralistic: Daily links from Cory Doctorow*, January 21, 2023, https://pluralistic.net/2023/01/21/potemkin-ai/#hey-guys. See, also, the Wikipedia entry for "Enshittification," https://en.wikipedia.org/wiki/Enshittification (accessed November 7, 2025).

11 Interrupting barriers to action mimic a form Behar associates elsewhere (in the context of cryptography) with adversarial labor. She defines adversarial labor as "labor understood as computational activities that don't produce surpluses. Instead, what adversarial labor 'yields' is *things that don't yield*: structures that exist firstly to stump brains and stub toes, to stand in the way or obscure." See Katherine Behar, "A GAN. Again. A Nonce. Anon. … And a GPU," conference presentation at *Experimental Engagements*, Society for Literature, Science, and the Arts, Irvine, California, USA, November 8, 2018.

12 One might think that we could simply choose where and whether to respond to an alert, but as we discuss below with respect to Natasha Dow Schüll's work, this is by no means a simple matter of an agential decisions.

After Interactivity

Why call this interruption? To signal a distinction from both the question of an autonomous self-possessed subject (who *could* be distracted) and the newly emergent (and oft-discussed and celebrated) automated decision-making. The experience of quotidian computing today isn't captured by either of these paradigms. And yet the design history of smartphones reveals that this has always been the case: our decisions about use are always already shaped (though not determined) by the corporately designed imaginative spaces opened in our interactions with our devices. It is only because we can abstract a desktop from an actual piece of furniture that we can make sense of and act within a desktop computer.[13] Likewise, it is only because we can think of an app as a real and existing entity that we can attune to what it wants from us. People who have lived in different regions or countries often feel how design assumptions—for better and worse—that seem natural in one place don't hold in another. But no need to travel: we only need be alive and digitally active long enough to feel how our particular dialect is replaced by another, less comprehensible one. To wit, everyone's phone is on "silent" now.

What changed? Since at least the early 90s, interfaces were (in principle) designed to be as smooth as possible, to the point where most technology designers would accept in advance that the perfect interface would be invisible and unnoticed.[14] For example, early iterations of web design prioritized frictionless passage through online content. Pre-dotcom crash, designers contending with sluggish dialup speeds sought to minimize the frustration of slow-loading pages, so on "well-designed" sites important content load-

13 To be clear, the term "abstraction" here refers to the ability (and necessity) of imagining something in its temporal and formal registers, rather than merely atomistically. As such, it is by no means opposed to something like embodied knowledge, but abstraction is instead inseparable from embodiment.

14 Steve Krug's best-selling *Don't Make Me Think!*, first published in 2000, exhorted web designers to unburden users from thinking. Krug's "overriding principle" for usability design is that on first glance "a Web page … should be self-evident. Obvious. Self-Explanatory" immediately for anyone who looks at it. See Steve Krug, *Don't Make Me Think (Revisited): A Common Sense Approach to Web and Mobile Usability* (San Francisco: New Riders, 2014). Consider the same logic in offline product design, as in the case of "Norman Doors." Named after usability design guru Don Norman, a Norman Door is any door that is not intuitive to use. If you have ever pulled a door that needs to be pushed, or pushed a door that needs to be pulled, you have encountered a Norman Door. See also the canonical Donald Norman, *The Design of Everyday Things*, revised and expanded edition (New York: Basic Books, 2013).

ed first and an "as few clicks as possible" methodology held sway (if not by making it as easy as possible, how else could the general public ever have been convinced to become users, lured into participating in the nascent commons of the then-new-fangled World Wide Web?)

Such early internet mores shaped and were shaped by the development of ubiquitous computing, which extended these principles into a new, distributed form of computing that not only dispensed with acute attention, but even defied notice. Rather than a terminal-bound attentive activity, technology was willed to disappear. Computing's becoming-invisible was accomplished by its integration into everyday objects, a legacy that continues today as the Internet of Things.[15] To the extent that computers were conceived as tools, their design aimed to facilitate any task to which they were put with seamless transparency.

This approach was so naturalized that its politics became the subject of perhaps *the* central debate of media theorists, encapsulated in Friedrich Kittler's famous insistence that interfaces are fundamentally ideological.[16] In this view, meaning is primarily produced at the operational level (i.e., code) of a computer rather than in the semantics of its interface, so that to use a computer responsibly requires being able to intervene in the former rather than just the latter. This matters, for Kittler and many others, because by designing "natural" interfaces that make computers usable "out of the box," technology manufacturers were widening the gap between these

15 Credited as defining the field of ubiquitous computing, Marc Weiser promoted a vision that hinged on invisibility. In his words, "The most profound technologies are those that disappear. They weave themselves into the fabric of everyday life until they are indistinguishable from it." Along with his Xerox Park colleagues, Weiser strove "to conceive a new way of thinking about computers, one that takes into account the human world and allows the computers themselves to vanish into the background." See Mark Weiser, "The Computer for the 21st Century," *Scientific American* 265, no. 3 (September 1991): 94–104. See also the discussion in Jennifer Gabrys, *Program Earth: Environmental Sensing Technology and the Making of a Computational Planet* (Minneapolis: University of Minnesota Press, 2016). Note that for others like Wendy Chun, this emphasis on invisibility and transparency is a symptom of the inverse: "The current prominence of transparency in product design and political and scholarly discourse is a compensatory gesture." See Wendy Hui Kyong Chun, "On Software, or the Persistence of Visual Knowledge," *Grey Room* 18 (Winter 2004): 27.

16 Friedrich A. Kittler, "There Is No Software," in *The Truth of the Technological World: Essays on the Genealogy of Presence* (Redwood City: Stanford University Press, 2014), 219–29. See also Geoffrey Winthrop-Young, "Hardware/Software/Wetware," in *Critical Terms for Media Studies*, ed. W. J. T. Mitchell and Mark B. N. Hansen (Chicago: University of Chicago Press, 2010), 186–98.

two registers, thereby foreclosing in advance the most meaningful forms of engagement users could undertake with computers.

This insight led to numerous laudable initiatives ranging from open source software to "right to repair" laws and various DIY technologies and protocols. At the level of design, however, these initiatives have proved largely unsuccessful: consumer computation today—in all its guises—is performed by machines that are black-boxed. This is truer than ever if we include as part of black-boxed computation not just the hardware we buy as stand-alone machines, but software[17] and increasingly ubiquitous AI technologies, whose power lies in the fact that the ways they work can never be accessible to human intervention at the operational level (hence "prompt engineers"). Whether Kittler was correct or not (an open question), it is indisputable that computers today work more than ever to nudge actions and decisions in ways that are both unnoticed by and literally inconceivable to their human users.

But actually, the disappearance of interfaces didn't happen… or at least, it isn't all that happened. At just the moment Weiser predicted, when terminals have been replaced by everyday devices—like wearables, like the Internet of Things, like smartphones (of course)—interfaces have *not* vanished into the background. Quite the opposite. Compared to the minimal clicks of early web design, today's web pages insist on failing to load, often in the most obnoxious fashions possible.[18] Any online task requires slogging through myriad micro-interactions, all of which interrupt intent. Somehow, this era of completed interface—this moment when computers are everywhere and consist in interfaces all the way down—still requires an unprecedented amount of clicking. Perhaps we should have expected as much, given consumer technology's unerring ability to land on the worst

17 Wendy Chun explains how political and subjective inequities persist in software, writing that "software perpetuates certain notions of seeing as knowing, of reading and readability that were supposed to have faded with the waning of indexicality. It does so by mimicking both ideology *and* ideology critique, by conflating executable with execution, program with process, order with action … The knowledge software offers is as obfuscatory as it is revealing." Chun, "On Software, or the Persistence of Visual Knowledge," 27–8. For her more recent work on this subject, see Wendy Hui Kyong Chun, *Discriminating Data: Correlation, Neighborhoods, and the New Politics of Recognition* (Cambridge, MA: MIT Press, 2021).

18 To be fair, broken links and 404s were probably more common in the 1990s, but for us the explicitness of these malfunctions was less frustrating than the current interruptive postponements. That is, broken links were unintentional, whereas contemporary interruptions are obnoxious because they are designed to be that way.

of both worlds (see Elon Musk, entrepreneurial technologist and political activist). Nonetheless, we might note just how annoying this is and, much more seriously, what a degraded and degrading individual experience it amounts to for all of us, since we are all perpetually conscripted as users.

Ironically, the seamless invisibility that designers promised is met with silence, but this silencing (of phones) is paired with an interface that loudly interrupts. While it's sonically silent, it's far from "disappearing."

After Agency

Of course, phones make plenty of sounds besides alerts. In interface design, sounds are usually deployed either to confirm that a user's action has been correctly registered or to solicit a user to take action. In the first instance, think of the "tocks" of touchscreen typing absent the mechanical click of a keyboard key. In the second, consider the "pings" of a message arriving, its preview banner flashing briefly on the homescreen to initiate a knee-jerk series of actions: head pops up, eyes search for phone, face unlocks screen, user reads message. By both confirming and soliciting, interfaces interpellate users as communicative subjects in dialog with and within a technical ecology that affirmatively sounds out their position in it. This is interface design in service of a vision of interactivity that hinges on agential subjecthood.

The tock of typing renders an otherwise inscrutable activity meaningful, inviting us to imagine (correctly) that the glass screen is also something else. Whatever it is, that something else is where we pursue meaning. However, a tock is no longer necessary because interactivity is now also the site where the opposite happens: otherwise meaningful activity becomes inscrutable in the mire of interruptions. This is why, like alerts, so many people have stopped tocking: keyboard tocks can be turned off only if the touchscreen's sounds have been internalized. The silence of phones is sounded as a voice whispering inside our heads. A tinnitus of the times: unheard by others, unverifiable but undeniable, it is at once deeply psychological and materially of the broader world. It is unheard, and yet we can't but listen to its forceful mixing of physical and psychological worlds. Yes, this internalized voice[19]

19 Or is it externalized? The material status of tinnitus is highly contested, and in many respects inseparable from the (often for-profit) medical and para-medical industries in which it is managed. Notably, in most cases tinnitus seems to be a psychological phenom-

mouths the "tock" of interactivity, but also something else: the interruption of our agency, itself a symptom of the internalization of the impossibility of uninterrupted attention. Who can think with all this (tinnital) tocking?

Even absent tocks, we are hardly wanting for ways to know that we haven't achieved what we're trying to. If anything, being constantly stymied by interfaces means we rarely do what we set out to. Rather than affirming that we are operating within a system as happily interpellated users, silenced design elements only affirm that we are caught up in a system that operates against us, against our will, against the myth of interactive agency. We don't need *not* to hear a tock to know we haven't achieved our intention, to know our networked action is meaningless. *Perhaps we didn't type correctly, mis-entered a password, typed in the wrong form field, auto-filled accidentally.* Or else, we respond as if a bureaucratic behemoth adjudicates from across the interface. *Did we slack off in catching all images showing sidewalks? Why hasn't our 2fa SMS arrived? Are we still logged in to the wrong account? Maybe we need to pause our ad blocker?* Design (and the consumerism it caters to) leads us to think the smartphone's smartness is there to make us smart, but its smartness is in service of a larger network that reduces us to headless clickers. We are animated by an agency we never had, viscerally felt as something that we did or will or could have… just as soon as we successfully click through.

Hence, the changing norms and presumptions of interactivity reveal a change in subjectivity that goes hand in hand with the affective shift from distraction's pleasures to interruption's frustrations. This new subjectivity signals a larger interruption of agential subjects writ large. Just as the alert signals (to) a subject whose attention it requires, the broad cultural silencing of alerts is only possible for a kind of subjectivity that has already internalized interruption. That is, the agent who *does* is itself interrupted. An alert summons interaction. But interaction is distributed among gestures/tasks/measurables that need only register a doing in a database; as data

enon insofar as the ringing is not audible to others and can be aggravated by, for example, worrying about it. And yet, the tones can also (sometimes) be treated by techniques using physical phenomenon including "masking" tones. See Mack Hagood, *Hush: Media and Sonic Self-Control* (Durham, NC: Duke University Press, 2019).

collection gives way to data discorrelation,[20] data need not cohere as an individual profile associated with an agent.[21]

As a result, the imagination of the erstwhile subject who would conceive a task in the first place has, by virtue of being always already looped into this interruptive circuit, taken on a distributed and ineffectual character so as to align with this ecology.[22] What does that sound like? Nothing. Certainly not the buzzing silence celebrated by Cage.[23] Instead, it's the existential blah blah of commercials and television transposed from the 20th century. When this emptiness reappears as the sound of silent phones, it becomes worse: the agential nothingness of the listener.

Wedded to the addictive pulses of dopamine release, the background buzz of addictive nothingness circuits new media technologies through the (non) thrills of gaming. In Natasha Dow Schüll's unflinching account, casino algorithms and architectures work in concert not in the service of gambling (as it seems), but instead according to the demands of the human hormonal systems they recruit to service capital.[24] The question of whether we *like*

20 Shane Denson uses the term "discorrelation" to describe the way that contemporary technologies emphasize the gap between sensation and experience, most notably in the case of the severing of images from perception that occurs through computational processes. See especially *Discorrelated Images* (Durham, NC: Duke University Press, 2020) and *Post-Cinematic Bodies* (Lüneburg: Meson Press, 2023).

21 Parsing a shift from disciplinary society to control society, Gilles Deleuze notes that "in the societies of control one is never finished with anything—the corporation, the educational system, the armed services being metastable states coexisting in one and the same modulation, like a universal system of deformation. […] In the societies of control … what is important is no longer either a signature or a number, but a code: the code is a *password* … The numerical language of control is made of codes that mark access to information, or reject it. We no longer find ourselves dealing with the mass/individual pair. Individuals have become '*dividuals*,' and masses, samples, data, markets, or '*banks*.'" Gilles Deleuze, "Postscript on the Societies of Control," *October* 59 (1992): 5.

22 Denson describes a "strange self-displacement […that turns] itself and the world into a weird volumetric ouroboros." Denson, *Post-Cinematic*, 64.

23 Cage famously declared that "there is no such thing as silence" after his 1951 experience in an anechoic chamber, during which he could hear internally generated comments. Subsequent to this, he maintained the position that seeming emptiness is full of activity and movement. For an account of Cage's evolving poetics of silence, see Eric De Visscher, "'There's No Such a Thing as Silence…' John Cage's Poetics of Silence," *Interface* 18, no. 4 (1989): 257–68.

24 In her study of machine gambling in Las Vegas, Natasha Dow Schüll asks after "the technological conditions by which interaction turns into immersion, autonomy into automaticity, control into compulsion." This set of transformations takes place when gamblers enter "the zone" which Dow Schüll describes as "a state in which alterity and agency recede." Necessarily, the zone's "turn to automaticity" presents a conundrum for interaction design:

slot-machines is unrelated to whether we will continue to pull the handle, and the interface design of algorithmic gambling leverages this lever-habit, even as levers themselves are replaced by a digital hit (cousin to the click).

It's not the interface that disappears, but the agent at the interface who fades away. Or more properly, the wincing embodiment of that agent: gamblers wet themselves at the slots, so locked into the algorithm's rhythms that they can't break away from their stools for a body break.[25] Despite derisive tropes, these folks are not losers—or at least no more than any of us. They are not losers because they have no pretense of beating the machine. The vacuous nothingness of fulfilling the timing called out by the machine is an end in itself. They are losing money, but they are winning the pleasure of distraction in spades. What is winning if not the luxury of opting out by checking out? It's a win when these nothings distract soothingly from the somethings of life better left behind.

If Cageian quiet heightened attention to the world outside, to the abundant sonic surround, then Dow Schüllian disconnect puts that surround (and the perceiving subject it centers) on mute, folding in on itself (on oneself). Even if it looks like total focus, this kind of utter absorption is of the same continuum as distraction. It is only possible for hyper-intact subjects: those very subjects who are now, we propose, interrupted.

Agential interactivity turned the Cageian surround around, making the cybernetic self—a self locked into the feedback loops of technical cir-

"Designers' struggles to make sense of machine gambling when there no longer seems to be an agent at the controls of the game—that is, when play becomes 'autoplay'—rehearse the conflict between their rhetoric of stimulating entertainment and players' preference for the rhythmic continuity of the zone." See Natasha Dow Schüll, *Addiction by Design: Machine Gambling in Las Vegas* (Princeton: Princeton University Press, 2012), 168–77.

25 Dow Schüll recounts gamblers soaked in their own vomit and urine and even falling into a diabetic coma (Dow Schüll, 179). The uninterrupted absorption of play distracts gamblers from their own bodies such that "the most extreme of machine gamblers speak in terms of bodily *exit*." (174). Just as a gambler's bodily agency recedes, so too does the "alterity" of the machine, such that in the zone, the interface separating body from machine evaporates and the two become one: gamblers' "own actions become indistinguishable from the functioning of the machine." In our context, we note that gamblers' preference for this type of suspended immersion where awareness recedes is precisely at odds with the economies of interruption we are describing in contemporary online experience. For example, Dow Schüll describes how casinos launched innovative programs that aimed to entice gamblers only to fail by interrupting their play. These programs failed to recognize that the goal should be to keep gamblers in the zone, an "experience … characterized not by stimulation, participation, and the gratification of agency but by *uninterrupted* flow, immersion, and self-erasure" (170–71, italics added).

cuits—into its own landscape. This inside-out interior, subjective landscape is a landscape for extracting value. The internalization of alerts, however, marks a new turn in that extractive logic made possible through a redesigned form of interactivity—appification—that does not cater to agents but rather dismantles agency.

When the sonic abundance of silence as the Cageian surround is extracted as the ho-hum buzz of emptiness, addictive nothingness is not what's left after extraction but instead the subjective frontier where this particular form of extraction is possible. In that case, if our speculative thesis holds true, will future casinos—at the avantgarde of attentive disorders—soon forego all of their distracting bells and whistles, their interruptive ecology having been fully onboarded onto would-be gamblers?—oh wait, this is already the case: as of February 2024, over 80% of betting in the U.S. happens online, the majority of it via mobile phone.[26]

In sum: If interactivity, with all its out-loud beeps and dings, follows from a lineage that prioritizes agency (the agent summoned and confirmed by those sound effects), then the silencing of interactive sound effects announces the emergence of a different, non-agential attentive subject. This subject pays attention without the pathological refocusing of constant pings. If pings refocus individual agency and attention by confirming and soliciting, those sounds are part of an attentional economy that delivers eyeballs (and eardrums) to advertisers based on an antiquated assumption that users are worth it: that our attention has value.[27] These pings distract, leading us on and into pleasurable time-sucks that fuel self-satisfied complacency. By contrast, interruption characterizes the devalued sonic subject

26 See Wayne Perry, "Super Bowl Bets Placed Online Surged This Year," *PBS News*, February 12, 2024, https://www.pbs.org/newshour/economy/super-bowl-bets-placed-online-surged-this-year-verification-company-says#:~:text=The%20data%20records%20the%20number,done%20online%20in%20the%20U.S and "The Evolution and Rise of Mobile Betting," *Uplatform*, June 20, 2022, https://uplatform.com/news/the-evolution-and-rise-of-mobile-betting.

27 In historicizing the exploitation of attention in contemporary technoculture, Jonathan Beller argues that "we have entered into a period characterized by the full incorporation of the sensual by the economic. This incorporation of the senses along with the dismantling of the word emerges through the visual pathway as new orders of machine-body interface vis-à-vis the image. All evidence points in this direction: that in the twentieth century, capital first posited and now presupposes looking as productive labor, and, more generally, posited attention as productive of value." Jonathan Beller, "Paying Attention: The Commodification of the Sensorium," *Cabinet Magazine* 24 (Winter 2006–2007), https://www.cabinetmagazine.org/issues/24/beller.php.

of an online experience, a vibratory ecology that has been fully internalized so as to put the online self itself on mute. Just as Marx made clear that the factory conceives workers in the image of machines, so does this interruptive ecology make discorrelated clicks of us all.[28]

After Actions

What is perhaps most frustrating about the dinner reservation scenario is that a direct alternative remains in recent memory, when a reservation could be attained quite quickly with a simple, focused action: calling the restaurant.[29] Nevertheless, we resign ourselves to no-way-out frustration online, having internalized a structure of interaction that doesn't even deign to distract us with dings. We know perfectly well what we want to do, yet can't do it because we are constantly interrupted. What we want has become irrelevant; the specifics don't register anywhere because all that matters is that we have wants at all insofar as our having them fuels an impulse to continue with our actions.

The asocial totality that results from this dividuated status quo reinforces the irrelevance of personal pleasure and even the pretense of agency. Parsed as "grammars of action"[30] that can be captured as measurables, personal actions are disassociated from intentions and transformed into collectivized data sets that train machine learning systems, dream up demograph-

28 For Denson, discorrelation leads to a generalized interchangeability that "follows from processes of desubjectification and dividuation, which facilitate the human's insertion into the technical system and effect the hollowing out and replacement of affective life with the microtemporal rhythms of the machine." Denson, *Discorrelated Images*, 185.

29 Notably, calling a restaurant is an audible practice, which may partially explain why so many people have become uncomfortable making phone calls—we want phones to be silent devices. Moreover, the rogue move of a telephone call operates outside of the tightly scripted grammars of action that code behavior in an appified world. As Phillip Agre asserts, "grammars of action" begin by designing technical systems modeled on social systems, but ultimately rechoreograph social systems to make them legible to technical systems, such that the grammar brings the two into accord. See Phillip Agre, "Surveillance and Capture: Two Models of Privacy," *The Information Society* 10, no. 2 (1994): 101–27.

30 Through the concept of "grammars of action," Agre demonstrates how technical systems that are initially developed to facilitate an existing social activity ultimately end up shaping that activity in ways that pervert it to accommodate the logic and limits of the technology. Often, this is because a measurement is taken to stand in for that which it measures, which Agre explains as a "capture model" of privacy practices.

ics, and hook us into the compulsive circuits of communicative capitalism.[31] This further signals a shift away from personal data that needed to reference an individual's quirks for targeted ads; instead, anonymized data feeds into generic systems in which individuals are as irrelevant to marketing as their desires. We are no longer consumers who might be catered to, nor content creators whose impulses count for something. We ceased being members of the public long ago because those social actions are ungrammatical in today's technical milieu. Now our engagement has little to do with participation or even transaction because our opportunities for interactivity are foreclosed even further. Instead, to be a user now resembles the role of Mturkers who are made to produce value in the form of Human Intelligence Tasks—so called because its taskness divests the person undertaking it of exactly their human intelligence.

In this way, the silencing of phones signals an evacuation of desire, alerting us to the transition from an economy of distraction to an extractive economy of interruption. This silent sonic ecology rehearses the primordial role that technicity plays in our bodily arrangements, and the porousness of bodies.[32] Yet, while the fuzzy reality of multiplicitously technical bodies is often noted, it's impossibly slippery to hold onto: theory rarely tracks the perceptual shifts that concepts require.[33] We insist that this plays out

31 As Jodi Dean argues, "values heralded as central to democracy take material form in networked communications technologies," but in doing so any particular contribution "need not be understood; it need only be repeated, reproduced, forwarded." As Dean concludes, this means that "circulation is the context." Jodi Dean, "Communicative Capitalism: Circulation and the Forclosure of Politics," *Cultural Politics* 1, no. 1 (2005): 59.

32 Bodies are never isomorphic with themselves: the boundaries of our legal bodies are different than (if caught up in) our political bodies (see the difference between anti-abortion laws and anti-protest policing), just as the boundaries of biological bodies have a complex relation with embodied experiences of the possibility space of decision-making. For better and worse, addressing this has been a central promise of sound studies insofar as sound constitutively complicates the very notion of a boundary. In this context, the concept of listening can keep us in touch with the vagaries of our new ecology: to ask after a change in technology—to listen away from the pings of consumer tech in favor of the rhythms and distributions of complex relations—is to ask after how such boundaries are maintained and breached in a given episteme.

33 "That the ubiquitous theoretical language about the body did not touch my own body provoked a nagging question for me, propelling me into a zone of nonbeing, as Franz Fanon calls it, in which the body is named, referenced, and yet predominated by a form of conceptuality that rejects and anesthetizes sensation. Embodiment goes beyond the question of what the body is able or unable to do. After one too many seminars in the academy where I felt not a single audible breath upon my skin, I came to see that it doesn't matter how much you

as a certain kind of internalization in the present interruptive moment of smartphones: the silence of contemporary phones sounds an absent dial tone that drones in the space between our ears.

After the Death of the Social (Again)

A focus on distraction distracts. It keeps us from noticing that, at base, today's internet operates bureaucratically: it takes our impulse to act (e.g., to seek out some information) and routes it through a complex of clicks, links, etc., that sucks the energy out of us.[34] We know this feeling from the old days of mindless waiting punctuated by traipsing drab corridors between offices only to wait again (which continues now, but in and as an historical form), or hours of banal hold music sounded through tinny telephone speakers only to be disconnected on transfer.[35]

We also know that bureaucracies enact power discrepancies: on one side, an entity of unknown size, the workings of which are occluded; on the other, individuals who need something that can only be achieved by persisting through these unnavigable channels. Crucially, though power is in the bureaucratic room (or, perhaps more appropriately, the work-from-home office), it is always diffusely so: we might call it architectural in that it conditions our activities to preclude any genuine encounter. In short, bureaucracy is a technology for maintaining the status quo, taking any individual's impetus for action and making sure it is utterly exhausted before it can have

talk about the body, theorize it, how much you stitch together the psyche with the political at that level of abstraction. If perception and sensation are not part of that effort, the result is a schism that leaves radical knowledge even more vulnerable to commodification and capture. When theory does not find a language for tracking the perceptual shifts that conceptuality calls for, rather than merely describing those shifts, theory reinforces its own separation from life." Anita Chari, *A User's Manual to Claire Fontaine* (Milan: Lenz, 2024), 13.

34 Put differently, what is meaningful is dictated from within the workings of a bureaucratic system, and is thus indifferent to actions outside of it. As David Graeber demonstrates, within a bureaucratic system the "algorithms and mathematical formulae by which the world comes to be assessed become, ultimately, not just measures of value, but the source of value itself." David Graeber. *The Utopia of Rules: On Technology, Stupidity, and the Secret Joys of Bureaucracy* (Brooklyn: Melville House, 2015), 41.

35 Consider, for example, Deleuze's brief analysis of Kafka's *The Trial* where he situates the story at the pivot between disciplinary society and control society, with the former acting through the "apparent acquittal […] between two incarcerations" and the latter characterized by "limitless postponements" in continuous variation. See Deleuze, "Postscript on the Societies of Control," 5.

any effect. Political power peters out once channeled into the Kafkaesque labyrinths of institutions. Desire for change—real change—withers on the vine, or rather withers in the waiting room for the umpteenth time.[36]

Online interruption doubles down on this bureaucratic logic by leveraging the solidity of its status quo power discrepancy to activate protocols of bald extraction. Harvesting energies further consolidates power. Every click gives more information—tracking, demographic, timings, and otherwise—to a network that's wholly indifferent to any actual desires that may have instigated clicking to begin with: everything that can be measured is, and what can't be is so starved of air that it ceases to exist. The system is working precisely as intended, just not by any individual. We all know that everything everywhere is being tracked, and that this extractive tracking services big tech (which is, increasingly, big everything: the four largest companies—by market cap—are presently Apple, Microsoft, Nvidia, and Alphabet).[37] We've all been conscripted into this exchange: we trade a portion of our privacy and autonomy for the ability to do things online.[38] If capitalism has long made

36 This psychology and aesthetic are perfectly captured in a short novel by Georges Perec. See Georges Perec, *The Art and Craft of Approaching Your Head of Department to Submit a Request for a Raise*, trans. David Bellos (New York: Verso, 2011).

37 Shoshana Zuboff demonstrates in clear and accessible language how digital surveillance has emerged as an unprecedented new market form and what the consequences of this are. See Shoshana Zuboff, *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power*. (New York: Public Affairs, 2019).

38 The pernicious practices involved in this "trade" ought to give us pause, particularly as technologies that compromise privacy are often debuted through testing on disproportionately vulnerable populations. For example, Virginia Eubanks has shown how many problematic privacy-infringing technologies have been developed in the context of social and governmental programs that interface with the poor—a population that frequently has no alternative but to compromise their privacy in order to attain access to crucial social welfare programs, or that is disproportionately criminalized by automated processes deployed by state programs. As Eubanks explains, "Marginalized groups face higher levels of data collection when they access public benefits, walk through highly policed neighborhoods, enter the health-care system, or cross-national borders. That data acts to reinforce their marginality when it is used to target them for suspicion and extra scrutiny. Those groups seen as undeserving are singled out for punitive public policy and more intense surveillance, and the cycle begins again. It is a kind of collective red-flagging, a feedback loop of injustice." See Virginia Eubanks, *Automating Inequality: How High-Tech Tools Profile, Police, and Punish the Poor* (New York: Picador, 2018), 6–7. Similarly, Ruha Benjamin has exposed how in "everyday contexts … emerging technologies" are "often [employed] to the detriment of those who are racially marked." This is especially the case for technologies that profess to be "colorblind" but collect data that serve as proxies for discrimination, amounting to what she calls a "New Jim Code." That is, "technologies [that] pose as objective, scientific, or progressive, too often

hypocrites of us all,[39] the contemporary internet is its nadir (or zenith, since the world is upside down), taking hold at the very incipience of our cognitive activities.[40] This is manifestly terrible, but at least it used to be fun.

Because it's really not fun anymore! Not just in the larger sense of existential dread that has long been in the mix, but even at the basic level of stimulation. Kafka's twentieth-century bureaucracy resounds as the muffled reverb of closed interior spaces, with any signal muffled to the point of indiscernibility; the present inward turn articulates this instead as an almost total inaudibility—a social anechoics.[41]

As with pleasures, displeasures speak in highly specific dialects, latching onto the bodies, materials, histories, and concepts that shape them. Being online in today's interruptive ecology offers a twofold displeasure: on one hand, the short-circuiting of distractive pleasures into the banal slop of a consumerist internet,[42] and on the other hand, the visceral frustration of not being able to get anything done. The former is a lost cause: once online networks became THE INTERNET, a form was inaugurated that was never truly social and is therefore politically impossible to reclaim as a public space. The latter is still a developing threat: that we feel exasperated making a dinner reservation signals that this crappy, boring, extractive future isn't yet fully scripted. Feeling out of sorts signals that we are not fully absorbed into the setting in which we act, and that other actions are at least potentially sensible. If the situation is to be recovered, such recuperation will not involve interpreting or resolving this feeling of frustration, but will issue instead from the force the feeling exerts.[43] (Reader take note: there will be no recovering from this.)

reinforce racism and other forms of inequity." See Ruha Benjamin, *Race After Technology: Abolitionist Tools for the New Jim Code* (Medford: Polity, 2019), 2.

39 Eric Cazdyn captures this perfectly through his relation to life-saving drugs, which put him in a position where his political loathing of pharmaceutical companies (based on the exploitative practices that they deploy at every level) coincides with his appreciation that pharmaceutical drugs allow him to continue living. (Ironically, Fugazi—noted activists against the unjust distributions of the recording industry—just came onto my automated Spotify mix as I was typing this.). Eric Cazdyn, *The Already Dead: The New Time of Politics, Culture, and Illness* (Durham, NC: Duke University Press, 2012).

40 As Denson notes with respect to digital cinematic images, when images are severed from our perception (by virtue of processes that are materially and constitutively alien to human perception by virtue of their speed and scale), "it is our consciousness or sensation that becomes the immediate target of dividuation." Denson, *Post-Cinematic Bodies*, 58.

41 We are grateful to Andy Graydon for this felicitous formulation.

42 Such a purely transactional internet lacks the libidinous thrills of consumerism.

43 See Sylvère Lotringer, "The Dance of Signs," in *Hatred of Capitalism: A Reader*, ed. Chris Kraus (Los Angeles: Semiotext(e), 2001), 173–90.

Because make no mistake: the interruptive internet is in danger of being fully naturalized, and once it is we will be in a culture of completed interruption. If, as we contend, our technologies are seeping into our psyches to remake us (even as we remake them), soon our subjectivities and our socialities will both work according to the same logic. What will happen when the norm is to think, feel, and act interruptively? What will happen when we are no longer frustrated by being delegated the task of interpreting what our computer wants and acting accordingly? When it feels normal to act as human hypographs offering pop-up menus of auto-complete options for our computers to choose from?[44] Minus frustration, the alibi of a silent phone is no longer even needed, and sociality is (re)conceived in the image of extracted data. Identities (nevermind "people," that long lost concept), were already reductive. Now they are mere placeholders for extractions to come. These extractions transduce the indeterminable possibilities of collective energies into a predetermined post-social status quo.

So here's the scenario again:

> Instead of making dinner reservations, we opt to meet up with friends for drinks sometime the following week. Everyone is excited at the prospect, but no solid plans are in the offing. Precise timings and locations remain in the air. Unfolding over days, we absorb a continuous stream of proposed changes and equivocations. Only in the final moments before getting together, do these eventually give way to updates and assurances:
> "running late"…
> "on my way"…
> "so sorry brutal day :/"…

44 Thomas Mullaney uses the term "hypography" to describe the process of writing in Chinese on computers. Briefly, Chinese computer users have for many years typed with software interfaces that resemble "autocomplete" in their presentation of a list of options based on limited partial inputs. There are several software programs for this that are commonly used, and they differ dramatically from each other. Unlike the linear approach used in autocomplete (i.e., where one progressively enters the letters of a word from start to finish), these software interfaces allow much more complex allusions: one might, for example, do the equivalent of typing "zz" to start the word "pizza," as the rarity of this letter combination will produce a short enough list of options from which to select the word (which is done by typing the appropriate number). Crucially, this process in combination with the number of software programs in circulation and the variance between them means that it is unlikely that any two users will type the same keystrokes to type the same word. See Thomas S. Mullaney, *The Chinese Computer: A Global History of the Information Age* (Cambridge, Massachusetts: The MIT Press, 2024).

"parking!"…
"omg slow train"…
"10 min"…
"see you soon"…
"almost there"…

It's not just that the (silent) group chat never ceases, but that virtually all the messages disclose an interruptive sociality.[45] Our social interactions exist in an interruptive ecology that accepts in advance that energetic impulses (like social invitations) will both be routed through endless detours and subject to an extractive ethos. The latter, in this case, consists in the mining of sociality to improve the efficiency of errands that extend the consumptive possibility space at the expense of a social one.

This interruptive sociality also suffuses political space, where any impulse towards justice is met with a similar rerouting. Whether opposing a genocide or advocating for the job security of contingent faculty, an agential impulse towards justice is most often constituted in the bureaucratic terrain of interruption. In this case, at least we have a word for the slacktivist silencing of political action: clicktivism.[46] But this term implies that the problem is in the clicking, whereas we maintain that clicking is the symptom of an interruptive political ecology.

So let us return once more to the attentive transformation we are identifying as now underway. As we move from attentive distraction to attentive interruption, we move affectively from distraction's pleasures to interruption's frustrations. Further, we move from an online modus operandi that functions through the individual (an agential subject motivated by desire) to one that works despite the individual, or better, that dissolves the individual into discorrelated data gestures to be reassembled into an asocial

45 We are certainly not arguing that silent smart phones inaugurated interruptive socialities, but rather that they amplify them and thereby bend them into new and newly prominent forms.

46 While clicktivism is often understood as the internet version of "slacktivism" (which was coined in the mid 1990s) the use of Google Ngrams reveals that use of the latter increases dramatically as the internet has become more quotidian. Indeed, use of the term increases steadily through the 2010s and peaks during the Covid-19 lockdowns of 2020. In this sense, clicktivism constitutes the most robust form of slacktivism, rather than being a minor variant of it. The results of the Google Ngram query can be viewed here: https://books.google.com/ngrams/graph?content=slacktivism&year_start=1990&year_end=2022&corpus=en&smoothing=3&case_insensitive=false (accessed November 7, 2025).

totality. This totality is not big data as soylent green (i.e., made of people).[47] Yes, individual participation is involved, and yes, it amounts to a totality, but not the totality of the social. As we are constantly reassured by data privacy notices—anonymized data cannot be reverse engineered.

This interruptive circuit is how and where and why we submit to bureaucracy. Or rather, how not-quite-bureaucracy in its contemporary interruptive appearance submits us—our attentions, our interactions, our agencies, our actions, our socialities, and our unscripted futures—to its own extractive imagination.[48] If sonic metaphors seem perfectly suited to our times, this should give us pause: after all, what is the status quo but a description that denies its own prescriptive agency?[49] Likewise, if silencing our phones comes to seem only natural, such silence is the sound of the interruptive circuit closing.

47 Ten years ago, Gregory described how this asocial totality was already "pressured" by the ways "we have become deeply entangled in one another" through data's ubiquity, which puts us into "a 'weird solidarity' with one another." Specifically, Gregory noted how "automation, in tandem with big data and ubiquitous computing, promises a form of personalized care that is actually predicated on the participation of a much larger and abstract social body. In the production of these massive data sets, upon which the promise of "progress" is predicated, we are actually sharing not only our data, but the very rhythms, circulations, palpitations, and mutations of our bodies so that the data sets can be "populated" with the very inhabitants that animate us." See Karen Gregory, "Big Data, Like Soylent Green, Is Made of People: A Response to Frank Pasquale," *Digital Labor Working Group*, November 1, 2014, https://digitallabor.commons.gc.cuny.edu/2014/11/05/big-data-like-soylent-green-is-made-of-people/.

48 Collected data is used to "construct diagrammatic abstractions of features common in [the data], and gather these localized abstractions into predictive statements" that may or may not be legible to human users. Adrian MacKenzie and Anna Munster, "Platform Seeing: Image Ensembles and Their Invisualities," *Theory, Culture & Society* 36, no. 5 (2019): 17.

49 Robin James demonstrates that, in our present episteme, "acoustically resonant sound is the 'rule' [that] otherwise divergent practices use 'to define the objects proper to their own study, to form their concepts, to build their theories.'" "This rule is the qualitative version of the quantitative rules neoliberal market logics and biopolitical statistics use to organize society." In this way, "the sonic episteme misrepresents sociohistorically specific concepts of sound" as though they were natural, and then "uses sound's purported difference from vision to mark its departure from what it deems the West's ocular- and text-centric status quo." This episteme remakes and renaturalizes the white supremacist political baggage inherited from Western modernity "in forms more compatible with twenty-first-century technologies and ideologies." Robin James, *The Sonic Episteme: Acoustic Resonance, Neoliberalism, and Biopolitics* (Durham, NC: Duke University Press, 2019), 3–5.

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Abstract

This article considers the silencing of smartphones to trace a shift from a culture of distraction to one characterized by pervasive interruption. Specifically, we interpret the silencing of phones—once symptomatic of diversionary pings that targeted an attentive user—as signaling an internalization of the sonic ecology of their alerts. This shift manifests in a relentless bureaucratic friction in the digital ecosystems of which we are (unavoidably) a part, one that puts interruptive focus to work in an extractive register.

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INTERVIEW

The Tuba Thieves

Alison O'Daniel in Conversation with Pablo de Ocampo

PABLO DE OCAMPO (PDO): *Alison, you and I have been in conversation about your work for a few years now, and recently we have been connected through the cinema residency I invited you to do at the Walker Arts Center in Minneapolis, Minnesota. We've taken your film,* The Tuba Thieves*, as a launching point to present programs that think, pretty broadly and differently, about what it means to listen in cinema. And so, for starters, I'm wondering if you could talk about a formative or significant experience you have had with sound in cinema.*

ALISON O'DANIEL (AOD): Two experiences immediately come to mind. One is I remember seeing *Contact* in the theater, and I don't know how old I was…

PDO: *It was released in summer of 1997.*

AOD: So I was 17 then. And I remember sitting in the theater—the opening scene of *Contact* is the POV of something moving away from Earth and we hear a radio signal that's shifting and changing in relation to the distance away from Earth. And at a certain point it cuts and there's a very, very long segment of total silence. And I just had a moment where I realized I've never sat in a movie theater for this long with absolutely no sound playing.

And it really excited me. I thought it was such a beautiful experience. And then another memory is of seeing *Bridget Jones's Diary* and I really hated that movie. But I remember crying during one part and being completely blown away by a recognition of really not liking anything about the movie and yet the soundtrack was making me feel emotions very deeply. It was such cognitive dissonance because I was feeling very critical and yet was still able to be completely manipulated by a soundtrack. Those are two moments in experiencing Hollywood movies where I really understood

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early how the apparatus of cinema, and sound in cinema, can guide the viewer and control our viewing experience and our way of being, through our hearing.

PDO: *Yeah, both very manipulative, but in different ways.*

AOD: Cinema is so manipulative. Even if you're trying to make something where you're attempting authenticity, to sign a contract of sorts to not manipulate the audience, inherently, you will—there's just no way around it.

PDO: *Has the idea of listening, these themes of sound and listening and hearing, always been central to your practice or was that something you developed later in art making?*

AOD: Well, I've been Deaf/Hard of Hearing since birth, we think. My parents figured it out when I was three. I've had hearing aids since I was three. And I've been constantly thinking about and reconciling with certain elements of my Deafness since then. I was raised in a hearing family—the ethos of the 80s and 90s was a sort of that you can do whatever you want, be all you can be, blah, blah, blah. And the way that filtered even into things like audiology—the social realm guiding hearing parents of hard of hearing children was the default thinking to integrate deaf/hard of hearing children into the hearing world. Audiology gives you just the technical tools to hear. So there was no social consideration that you should meet your other half of deaf culture. I say all that because in a lot of ways I was really separate from Deaf culture—I didn't have the psychological and emotional framework to understand it or what I was missing, but I sensed the missing. So, my whole life I had all of these sonic experiences or sound-based experiences that were really intriguing to me, but also these experiences were isolating.

When I went to grad school at UC Irvine and started working with Bruce Yonemoto, he gave me some narrative film assignments, and I recognized I had a predilection for sound design, which was surprising, but reaffirmed a private consideration and awareness I knew I carried with sound. Because of that experience I wanted to meet the Deaf community. Also, at the same time I had gotten my first pair of digital hearing aids. So, there was this whole wild moment where I started hearing things I'd never heard before, and in ways I'd never heard before. Digital hearing aids were just really different from analog ones—they pulled me into a sonic space that felt extremely shifted, which reinforced that I have no idea how people really hear

unmediated. Therefore, I was also reconciling with how I socialize, and feelings of isolation, things that I had never really had language for, suddenly I was starting to comprehend and study. A big encroaching awareness slowly became unavoidable and fascinating at the same time.

PDO: The Tuba Thieves *is a project that's been a long journey for you. It spans across more than a decade of your practice in which these themes and ideas have been really central. I'm wondering, when did sound come into the development of the film? Did you know what it might sound like from the beginning?*

AOD: Yes. Because I think, like around the time, you know, the film started with this news story [of tubas being stolen from high schools in Los Angeles] and I was in the middle of noticing experiences with the car radio in particular…

PDO: *There was a news story about the actual tuba thefts from public school bands in the LA area that was unfolding live via a radio journalist.*

AOD: I was listening to NPR a lot and tuning in to these very Los Angeles stories about access to sound—and these stories were blowing my mind all the time. One of them was this seemingly really boring series of stories about soundproofing in Inglewood—where I live—because of LAX flight paths. These two stories—the tuba thefts and soundproofing under LAX—started to unfold in late 2011, early 2012. And then I would drive through the tunnel that goes to LAX and there's just this beautiful period in that tunnel where you lose any sort of radio signal. So, there's a good section where it's just radio static and I just love it—it's truly one of my very favorite sounds on earth, when a radio loses signal, I think it's so beautiful. So now there were these two themes existing, and you can really see how they wove together for me. Talking about it now, it's so obvious. The theft of the tubas; who's getting overexposed to this noise pollution sound; then losing these radio signals. And my own experience of having access to sound, not having access to sound. In a lot of ways I really feel like the film just built itself.

PDO: *Yeah, all those experiences you're describing are so central to the film. Those sounds were there from the beginning. I'm always aware when we talk of using language that centers the hearing perspective. I'm saying that to acknowledge it in a way. But I'm also really struck how your work helps us to think about how those ideas can be broken down and expanded in different ways.*

You titled your Walker cinema residency, "Are you listening?" And I think it was an intentional provocation in a way. Do you think of listening as something that can happen without sound? And what does that mean for you?

AOD: Yes and no. I mean, there's definitely the sort of spiritual aspect of listening as attunement—listening as a way of being present. But the idea of hearing is embedded in that, the idea of sound is embedded in those things. So, I was reading this interesting Reddit post where someone made a comment about the film *The Lighthouse*—and I haven't seen *The Lighthouse*, but I guess there's a scene where Willem Dafoe is farting—and in the film's captions it says that. And someone made the comment, "imagine being deaf and just learning that farting makes sound!" Deaf people *know* that farting has sound—to be deaf is to live in a hearing world and to constantly know that everything is sound-based. Deaf people know, sometimes more than hearing people, what does and doesn't have sound! Whereas hearing people aren't really thinking about that so much. I feel like I'm constantly in these realms where there's this simplification, or a kind of awe about ideas of deafness, and many misconceptions. I think it's fascinating how blown hearing people's minds are by deafness. I think because language is not shared, there's this gulf of separation. I really identify as being in the middle—like hearing people wouldn't necessarily know I'm d/Deaf—whereas Deaf people definitely know that I'm in the middle because I'm not fluent in sign language. And it's so meaningful to me when other Deaf people call me Deaf, don't call me hard of hearing—it's fascinating how endlessly big these notions around sound and listening are—I don't get used to them.

PDO: *Yeah, when you have access to that sense you don't actually pay attention to some of it. So, "imagine you're a deaf person understanding that farting has sound…" like of course, everything has sound! And that's even so much of John Cage's* 4'33", *which you reference in* The Tuba Thieves, *and also that famous Cage account of being in the anechoic chamber: even in the space of absolutely no sound, there is a sound that you are hearing—there's never* not *sound. When someone is fully in the hearing world and hearing everything, you're just having to filter out half of it, so you would never think of that.*

AOD: Yes, literally your brain is filtering it out because you would go crazy. And I don't mean to contribute to any sort of shame for hearing people, because I've also done that—like when I got that first pair of digital hearing aids, I had one of those like *4′33″* or anechoic chamber moments because I

peeled a banana and I remember just being like, oh my fucking god. It's got a sound. And I've written about that moment—I was just like, "of course, yeah, of course farting makes sound." But more interesting is to then think about when deaf people go into a public bathroom with hearing people, to know that you maybe don't have access to the sound that your body is making and other people do. That's where I think these kinds of social power dynamics become very intimate on a level that is much less hilarious or titillating. There are these questions of boundary-crossing that are really complicated.

PDO: *This is maybe an aside, but I'm just curious, when did you first encounter* 4'33", *and is there a hot take on* 4'33" *in the deaf community? Like, is* 4'33" *John Cage hearing-splaining deafness?*

AOD: I will say that one of the few reviews the film got by a Deaf person was by the author Delbert Wetter. He wrote in *The Hollywood Reporter* about how much he loved watching a Deaf person sort of take the piss out of *4′33″*—to have this man get up and walk out, to reject the show. Now, to back up—I had such a process-oriented way of building this film: I wanted to start out with the soundtracks, so I invited three people to make the soundtracks first. I gave them a bunch of visual references, and one of the references was from a book of hippie architecture. There was one picture of a concert hall in Woodstock, the Maverick Concert Hall, and I didn't know anything about it. But I sent this photo to Steve Roden, who was a painter, a musician and one of the three composers I was working with. For me it was just a photo of a concert hall, I could have sent him any of the photos in the book. But Steve wrote back and asked, "you know that's where John Cage premiered *4′33″* right?" I didn't, and I was embarrassed, and he thought it was amazing that I just randomly sent that to him. Because he had also been doing a daily meditation performance of *4′33″*. Every day. And he said, "the synchronicities here are incredible—you've got to do something with *4′33″*. I immediately bristled—I remember thinking, "oh no, that's so cheesy." I went and visited the Maverick Concert Hall. It's an absolutely beautiful space and I realized, that one of the things with *4′33″* that never gets talked about is that it originally was (maybe) unintentionally a piece about nature, because it's like a barn. You can hear the trees, you can hear the wind, you can hear everything around. I was struck by the intensity of the mythology of *4′33″*, it's always a conversation that skirts around ideas of silence. Deafness is also misunderstood or mythologized as being about silence or being an experience of silence, and then I could see this rich connection between

4′33″ and deafness. Part of what John Cage was investigating, that I think is so beautiful and powerful, is this allowance of everything to come in, into wherever it's performed, whether it's the sound of the audience, the trees, whatever. So, I gave myself permission to write this very simple character called The Irritated Man who gets up and leaves during a performance, and he goes out to have his own experience in the forest, one that's at first irritated but then gradually something stops him. So, when you can step back from the mythologizing or idolatry and just sit with the ideas—I love John Cage, and it's to the misunderstandings, or the quickness to make associations that I was saying, "I'm not here for that."

PDO: *Outside of moving image work you also have a studio practice that involves making objects and other gallery-based visual work. I'm wondering if you could talk about how these ideas show up in that practice.*

AOD: Through development of *The Tuba Thieves*, I was getting invitations from galleries and museums to show some of the scenes as I was slowly making the film. So, between 2013 and 2018 I made ten short films that were just scenes from *The Tuba Thieves*. And all the spaces in galleries and museums have bad acoustics, you know, they're not theaters, they're not necessarily made for video. So, the first time I had an exhibition, I went in and I thought, sonically this is going to be a nightmare, this isn't going to work. And then I realized I could work with that, and it was actually really fun. I had a show at the Bemis Center, and I remember sitting in the space and this huge HVAC system turned on, and I realized the center walls of the gallery were built around an HVAC. How were you supposed to ignore this? So, I actually miked up this center wall area, to make that sound a grounding part of the show. The show was called *Heavy Air*, which is also a caption in *The Tuba Thieves*. So, working with sculpture and objects really has become a way to amplify aspects of ambience and acoustics—to find practical solutions to bad sound which excited me. When I'm working with objects, I might be using sound-dampening materials that are making fractions of a difference in terms of the sound, or not at all; or to point a microphone at an air vent—the objects give me a way to make people pay attention, in a way that captioning does in *The Tuba Thieves*. It's forcing you to deal with things that maybe you wouldn't usually acknowledge. For instance, there's a caption in *The Tuba Thieves* of "air circulating." I really didn't have to caption that. I think it's interesting to hear those things hearing people can ignore and sit with them intentionally.

PDO: The Tuba Thieves *has been a revelation to me, and to many people who have seen it, just about how cinema might show up differently for both deaf and hearing audiences and people across the spectrum of hearing. If we want to get out of the binary ways of thinking about hearing and ability, I'm wondering if making* The Tuba Thieves *cracked something open or pointed you to new possibilities, and where you may go from here?*

AOD: Yes. But unfortunately, I was very surprised and yet not surprised as I was doing the film festival circuit, at the casual relentlessness of ableism—like that stupid Reddit thing, it blows my mind. So in some ways I feel like I'm taking this turn from a very joyful project to looking at a much darker side—I've been thinking a lot about the weaponization of sound in relation to ableism. The smaller stuff that is just so ubiquitous. I do also anticipate a lot of playfulness and joy though as well. I'm doing a project right now at UCLA with the Social Software and the Heumann Community Partnership Lab. We're trying to solve this really simple but real problem: as more d/Deaf people make films, whom obviously we are going to be thinking visually about and therefore making visual captions, when we get into the distribution part of a film, it's hard to translate those into other languages. We have SRT files that get translated for static lower third captions and subtitles, but what happens if a caption is fading on or off or has a little bit of animation? So, I want to solve this for filmmakers because it's a seemingly minor, but actually really unfair disability tax that adds extra labor. It's a technical issue that filmmakers are going to confront globally. I think there's an activism in me that I'm thinking through via the real issues in creative projects. I feel like I've stepped into this on-the-ground, in-the-world space of looking at where these bits of ableism live and thrive, and I want to halt it so that we can see, think, make, and listen clearly.

Pablo de Ocampo is Director and Curator of Moving Image at the Walker Art Center in Minneapolis, Minnesota. From 2014 to 2020, de Ocampo was Exhibitions Curator at the artist-run center Western Front in Vancouver, Canada. His previous positions include Artistic Director of Toronto's Images Festival from 2006 to 2014, co-founder/collective member of Cinema Project in Portland, Oregon, and in 2013 programmer of the 59th Robert Flaherty Film Seminar *History is What's Happening*, and is currently the President of the Board of Trustees for the Flaherty Seminar. His writing has appeared in Canadian Art, C Magazine, BlackFlash, and in the catalogues Wendelien van Oldenborgh: *unset on-set* (Museum of Contemporary Art Tokyo), *Dissident Lines: Lis Rhodes* (Nottingham Contemporary), and *Low Relief: Lucy Raven* (EMPAC, Mousse, and Portikus).

Alison O'Daniel is a d/Deaf visual artist and filmmaker and builds a visual, aural, and haptic vocabulary in her work that reveals (or proposes) a politics of sound that exceeds the ear. O'Daniel is the director of *The Tuba Thieves*, which premiered at the Sundance Film Festival 2023. She is a United States Artist Disability Futures Fellow and a Guggenheim Fellow. O'Daniel has also received grants from Ford Foundation; Sundance; Creative Capital; Field of Vision; ITVS; Chicken & Egg; SFFILM. She is represented by Commonwealth and Council Gallery in Los Angeles and is the Suraj Israni Endowed Associate Professor of Cinematic Arts in the Visual Arts department at University of California, San Diego.

ARTICLE

The Soundscape of Nothing: Raven Chacon's Silence Against Settler Colonialism

Gabriel Saloman Mindel

Orientation

In 2022 the Diné (Navajo Nation) composer Raven Chacon received the Pulitzer Prize for *Voiceless Mass* (2021), a triumphant synthesis of Chacon's decades-long project of unsettling listeners through dramatic uses of silence and noise. Throughout his career as an experimental musician, composer, sound artist and activist, Chacon has used the surprising juxtaposition of these two sonic extremes to command listeners attention that they might attend to the historical conditions that constitute our world. A radical conceptualist and student of modern music, many of his works respond to and challenge the unavoidable legacy of John Cage whose use of graphic notation, aleatory processes, and readymade soundscapes likewise had invited audiences to listen otherwise.[1] Both an impish provocateur and austerely serious, Cage staged quotidian noise as concert music such that his audience might hear a soundworld in which melody and harmony were only one organized part among a multitude. With characteristic matter-of-factness Chacon describes his compositions as "some action lining up with another action," a Cageian phrase if there ever was one.[2] These encounters with

1 The literature by and about Cage is extensive. Works that contributed to this essay include: John Cage, *Silence: Lectures and Writings* (Middletown, CT: Wesleyan University Press, 1961); James Pritchett, *The Music of John Cage* (Cambridge: Cambridge University Press, 1993); Kyle Gann, *No Such Thing as Silence: John Cage's 4′33″* (New Haven: Yale University Press, 2010); Benjamin Piekut, *Experimentalism Otherwise: The New York Avant-Garde and Its Limits* (Berkeley: University of California Press, 2011); Rob Haskins, *John Cage* (London: Reaktion Books, 2012).

2 "An Instrument That Had No History: Raven Chacon in Conversation with Pablo José Ramírez," *Mousse Magazine*, June 4, 2024, https://www.moussemagazine.it/magazine/raven-chacon-pablo-jose-ramirez-2024/.

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noise would go on to inspire extreme experiments in concrete music and free improvisation that in time would coalesce into the American noise music underground that also shaped Chacon's musical sensibility.[3] Chacon's work demands something more than the aesthetic reorientation applied to Cage's interventions, something other than the metaphysical anarchy of hearing the everyday as musical, or the rejection of music itself. Chacon's project restructures our ontological presuppositions. In his work we hear ghosts, winds, birds, the land speaking for itself, and the movement of these sounds in time. Listening through Chacon's work invites us to be in relation to a world that is animated and alive with a chorus of voices that are treated as unintelligible noise yet constitute a continual cosmological whole.

In the pages that follow I contextualize Chacon's work with silence and noise as an ongoing critique of settler colonialism. He accomplishes this task by challenging the systems of non-relational listening and musicking that have structured the contemporary artistic worlds in which he works.[4] His work challenges inherited European traditions of depicting the landscape as a place devoid of inhabitation, emptied of human and other-than-human life, lying in wait of proper use, or else for preservation to protect from prior improper use. These traditions are shaped by a *terra nullian ontology* that is legible in the Western cultural traditions of landscape painting and land art, as well the development of the soundscape as a compositional and documentary sonic object. Even as these practices aspire at times to being a tool of ecological defense, such modes of representing the land depend on orienting itself to the world through a settler relation. Chacon's contribution then is not merely to represent Diné, Native American, or Indigenous concerns in contemporary art and music, but to reorient his audiences towards ways of relating that are rooted in the knowledge and practices of those identities. This generous invitation to inhabit the world differently necessitates truth-telling and conscious listening in order to reconcile with the past, alive as it is in the present.

My own personal encounter with Chacon's work originated in our mutual participation in the loose networks of mostly American musicians who performed noise and other experimental genres in obscure venues such as Il Corral in West Hollywood where Chacon worked as a door person shortly after graduating from the California Institute of Arts. He had studied

3 Paul Hegarty, *Noise/Music: A History* (New York: Continuum, 2007).

4 Lawrence English, "Relational Listening: A Politics of Perception," *Contemporary Music Review* 36, no. 3 (2017): 127–42.

there with James Tenney whose connections to John Cage and the post-War American musical avant garde directed Chacon towards compositional work comprised of graphic notations and instructional scores. This mix of both vernacular and academic approaches to experimental sound work continues to shape the diverse modes of presentation and performance that we hear in Chacon's work today. It was more than a decade after crossing paths in the demimonde of the Los Angeles noise scene that I discovered Chacon's burgeoning body of conceptual compositions. I invited him to exhibit works that included *Field Recordings* (1999) and *American Ledger No. 1* (2018) as part of *Landscape & Life*, an exhibition and performance series I curated at Indexical in Santa Cruz, California in 2023.[5] A year later Chacon returned to Santa Cruz to perform *Voiceless Mass* at a Peace United Church of Christ, and it was there as an audience member that I first experienced the piece.[6] Collectively these works weave together different avant modernisms, including high and low strata of experimental music, in ways that also make uniquely audible Diné cultural knowledge.

Chacon's intervention into Western avant garde traditions, and in particular the noise/silence binary that since John Cage has come to define an outer limit for sonic arts, demands recognition of a multiplicity of relations to listening. In his 2020 monograph, *Hungry Listening*, *xwélmexw* (Stó:lō/Skwah) scholar Dylan Robinson invites his readers to examine their critical listening positionality through "a self-reflexive questioning of how race, class, gender, sexuality, ability, and cultural background intersect and influence the way we are able to hear sound, music, and the world around us".[7] This certainly speaks to distinctions between Indigenous relations to sound and settler habits of listening but, as Diné musician and scholar Renata Yazzie reminds us, the Dinetah perspective is itself distinct from other Indigenous positionalities, including Robinson's, despite shared experiences and world views.[8] Which is to say that there is a perspective audible in works such as *Field Recording* or *Voiceless Mass* which doesn't necessarily

5 *Landscape & Life: Raven Chacon*, curated by Gabriel Saloman Mindel, Indexical, Santa Cruz, USA, January 28, 2023–March 13, 2023, https://www.indexical.org/exhibitions/landscape-life-raven-chacon (accessed November 13, 2025).

6 *Voiceless Mass*, music by Raven Chacon, conducted by Michael McGushin, Peace United Church of Christ, Santa Cruz, CA, March 11, 2023.

7 Dylan Robinson, *Hungry Listening: Resonant Theory for Indigenous Sound Studies* (Minneapolis: University of Minnesota Press, 2020), 10.

8 Renata Yazzie, "Review of Dylan Robinson, *Hungry Listening: Resonant Theory for Indigenous Sound Studies*," *MUSICultures* 48 (February 2022): 396–9.

preclude understanding for settler listeners but that none-the-less exceeds that understanding. In these ways Chacon's work's own internal multi-perspectivism, drawing as it does from heavy metal, noise music, Western avant garde classical music, and traditional forms of Native American music cultures, creates both access and resistance to understanding. As the child of European Jewish immigrants, my own familiarity with Chacon's influences reach their limit as I encounter what Dena'ina musicologist Jessica Bissett Perea calls "the density of Indigeneity," the deep mixture of references to "aural and visual tropes of place (rural/urban), time (ancient/modern), genre (Native/non-Native), technology (manual/mechanized), and belonging (tribal or national/intertribal or transnational)."[9] In effect, there is a conceptual and epistemological opacity given to my status as non-Diné that in many ways this article attempts to navigate but not avoid.

My own family came to the United States as diasporic refugees, first in the late 19th century and then again following the end of World War II. My ancestors and relatives have something in common with those same European Jews who are so overrepresented in the European and North American Avant Garde as practitioners and critics. Arguably this familiarity has overdetermined my intellectual and artistic interests, contributing to a long period of relative ignorance to the ways I, my ancestors, and our cultures have participated in settler erasures and extracting material benefit from colonialism, especially as American Jews gained contingent access to structural whiteness in the latter half of the twentieth century. My turn to Indigenous art and theory is a response to personal ethical obligations as a scholar and artist arising from my position within the settler/Indigenous binary.[10] At the same time, my work as an activist alongside and in solidarity with various Indigenous communities—in particular səl̓ilwətaʔɬ təməxʷ (Tsleil-Waututh), Amah Mutsun, and Kānaka Maoli land defenders—has taught me new sensibilities and modes of thought that in turn have shaped my ways of engaging with art, music and critical scholarship.[11]

9 Jessica Bissett Perea, *Sound Relations: Native Ways of Doing Music History in Alaska* (Oxford University Press, 2021), 4.

10 I want to be clear that I consider this to be a structural and historically constituted binary that produces ethical obligations, but not an absolute, immutable, or uncomplicated relationship or set of identities.

11 To the extent possible I have tried conforming my use of Indigenous language, place names, names of people, and First Nations to contemporary norms. Preferences vary significantly among different Indigenous groups such that a word or term considered inappropriate in one context (for example "Indian" or "Band") is the preferred language in another (for

What follows is an attempt to listen otherwise with Raven Chacon by listening to Raven Chacon and the lands invoked through his work. I position his work in relation to Western modernism's varied approaches to listening to the environment as a sonic field, an artistic tradition that Chacon is both indebted to and deeply critical of.[12] I pay particular attention to John Cage's four minutes and thirty-three seconds of composed silence, a paradigmatic work of ecological sound art and twentieth-century conceptualism. In many interpretations of Cage's silence, and in ecological approaches to sound broadly, silence is a stand-in for the same *terra nullian* nothingness that haunts landscape painting. It is the sound of a world without people. Cage's silence, though unquestionably conditioned by Anglo-settler sensibilities, was intended to be a spiritual experience of transcendence, influenced by the metaphysics and phenomenological poetics of Thoreau's libertarianism, Japanese and Chinese philosophy, and friend Robert Rauchenberg's notorious all-white paintings. The nothingness described by these sources was not an evacuated emptiness but the experience of absolute immersion in being.[13] Such non-alienated presence sought a relief from the impositions of the material world on the spirit, a line of flight out of the catastrophes and suffering of existence in a man-made world. Chacon's work veers from such a pursuit by directly confronting the material histories that constitute such conditions of struggle and mourning.

In the pages that follow I endeavor to place Chacon's work within those material histories and cultural conditions that his compositions and artworks trouble and unsettle. I begin with considerations of how the Western

example, the Amah Mutsun Tribal Band who publicly identify as California Indians). I have tried to adjust my usage according to the specificity of who, where, and in what context I am speaking of. To this end I have relied on sources drawn from the specific Indigenous places and peoples I refer to, including Indigenous scholarship, the webpages of tribal governing bodies, the crowdsourced *Native Lands* app, as well as my own personal relationships. I have also referred to Opaskwayak Cree scholar Gregory Younging's *Elements of Indigenous Style: A Guide for Writing By and About Indigenous Peoples*, 2nd ed., ed. Warren Cariou (Edmonton: Brush Education, 2025).

12 Esi Eshun, "On Land," *The Wire* 494, April 2025, 40–5.

13 "They are large white (I white as I GOD) canvases organized and selected with the experience of time and presented with the innocence of a virgin. Dealing with the suspense, excitement, and body of an organic silence, the restriction and freedom of absence, *the plastic fullness of nothing*, the point a circle begins and ends." Robert Raucheenberg quoted in Gann, *No Such Thing as Silence*, 157. See also Karen Barad, "What is the Measure of Nothingness: Infinity, Virtuality, Justice," in *100 Notes – 100 Thoughts* (Berlin: dOCUMENTA 13–Hatje Cantz Verlag, 2012).

tradition of landscape painting produces and is produced by a *terra nullian* imaginary that is inextricable from a settler colonial framework for relating to land. I discuss the ways that phonography, sound art, and acoustic ecology emerge from within this same framework, and how silence as a cultural concept plays a role in reproducing these conditions. This conception of silence within sonic arts and ecology has its own history of which John Cage has played an outsized role, though often through misapprehending the purpose of his famous work of silent listening, *4′33″* (1952). I then turn my attention to the enduring role of deep listening and silence in the oeuvre of Raven Chacon, at first focusing on earlier works that explicitly are in dialog with Cage and the concepts of acoustic ecology, all of which trouble fundamental assumptions of who is listening and to what end. I follow with a detailed study of *Voiceless Mass*, a work that is not itself silent but forcefully addresses fundamental questions of who is made silent and how silence and listening, voice, and ceremony are all contingent on historical justice and injustice. Finally, I discuss another phonographic work by Chacon, *Silent Choir* (2017) which emerged out of the #NoDAPL movement and the unprecedented gathering of water protectors at Standing Rock, events which preceded and directly influenced the creation of *Voiceless Mass*. Throughout this study I am seeking to be in dialog with the poetic and political implications of Chacon's work, the insistence that listening to music and to the land are acts of relation that we cannot extract ourselves from, that there is never nothing there, that silence is noisy, and that our long histories of unresolved violence and ongoing acts of survival are emergent in the soundworlds that surround us.

Ways of Listening

The landscapes depicted in the great North American paintings of the nineteenth century are pictures of a *terra nullius* imaginary.[14] This is true of the romantic pastoralism of the Hudson River School, in the operatic vistas of painters like Thomas Moran and Albert Bierstadt, even in the lonely isola-

14 "Derived from Latin, [*terra nullius*] literally means 'land that belongs to no one'. The term comes from the *Papal Bull Terra Nullius* issued by Pope Urban II in 1095, at the beginning of the Crusades. The *Bull* allowed Europeans' princes and kings to 'discover' or claim any land occupied by non-Christian peoples in any part of the then known and to-be-known world. […] This *Bull* led to what came to be known as the *Doctrine of Discovery*." Pramod K. Nayar, "*Terra nullius*," in *The Postcolonial Dictionary* (New York: John Wiley & Sons, 2015), 153.

tion of the Group of Seven's modern invention of Canadianism. With rare exception these paintings depict vast depopulated expanses of wild earth, water, and weather, exemplars of "the dominant cultural project of Euro-North Americans [that would] articulate itself aesthetico-theologically in terms of the emptying of the wilderness."[15] These paintings capture *a world without people*—a people whose labors had helped to shape that landscape, a people who had to be removed to make that landscape empty, and a people who now stand behind the vanishing point of the picture plane. In this way these paintings also depict *a world without history*—a world whose transformations are obscured by the painting, whose attendant violence is literally painted over.

What's more, despite their apparent content these paintings portray *a world without life*—the animacy, dynamism, agency, and fecundity of the land flattened, abstracted, objectified, and made alienable by the very means of its depiction. Through these paintings, all the world before the settler is a property waiting to be claimed. This is the strange antinomy of what gets called "landscape" and "life" in a world shaped by liberalism's transformation of things held in common into property appropriate to the possessive individualism that would come to define American values.[16] Landscape painting, as W. J. T. Mitchell reminds us, is a doubled representation, not only a picture of what the artist sees but also how they see. "The landscape is itself a physical and multisensory medium … in which cultural meanings and values are encoded."[17] An idea about land inscribes itself into landscape painting even as these artworks inscribe an idea about land into the mind of those who encounter them. Thus prior to the removal of people, of history, and a deeper conceptualization of vitality from the painting of landscape, a *terra nullian* ontology has already removed these very things from the artist's perception of the land itself.

This critique of nineteenth century landscape painting developed out of a burgeoning examination of visuality that would become institutionalized as *visual studies*, a field whose aspirations include an interdisciplinary revision of naturalized assumptions about what and how we see. To look upon a landscape could no longer be a neutral act but instead needed to be

15 Jonathan Bordo, "Picture and Witness at the Site of Wilderness," *Critical Inquiry* 26, no. 2 (Winter, 2000): 246.

16 C. B. Macpherson, *The Political Theory of Possessive Individualism: Hobbes to Locke* (New York: Oxford University Press, 1962).

17 W. J. T. Mitchell, "Imperial Landscapes," *Landscape and Power*, ed. W. J. T. Mitchell (Chicago: University of Chicago Press, 2002), 14.

understood as mediated by colonialism, capitalism, and imperialism.[18] It was argued that visuality itself represented a modernist transformation in perception connected to the development of rational humanism, one characterized by masculinist and white supremacist values that designate who has "the right to look."[19] Depictions of landscape came to represent a "way of seeing" that privileged an identification with ownership, mastery, and a singular epistemic subject position, an approach to painting from and for the perspective of one who could imagine themselves holding these privileges.[20] This subject was someone who could imagine himself as distinct from the world, individuated from the entanglements of human sociality and the deeper matrices of ecological systems. This severing of the self and the world is intrinsic to landscape as an idea and as a mode of representation: to see a landscape, to picture a landscape, is to be outside it. The museum display case, the zoo cage, the safari boat, and the botanical garden are among a coterie of spatial technologies that emerged in the age of Imperialism as a means by which some could exercise their right to look upon things. Our contemporary practice of looking has only become more alienated, exponentially overdetermined by technologies that enclose our phenomenological capacities, disciplined through architectures of observation that reinforce categories of non-relationality.[21] Our smartphones and the promises of AI, AR, VR, and the Metaverse hardly suggest a return to a more holistic sensorium.

Even as late-twentieth-century critics interrogated the limits and capacities of seeing, other sense abilities were lauded as a means of intervening in the problems assumed to be fundamental to vision. In strong contrast to the alleged distance of sight, other senses, hearing in particular, were valorized as an immediate and immersive form of being in the world.[22] Such essen-

18 See Svetlana Albers, *The Art of Describing: Dutch Art in the Seventeenth Century* (Chicago: University of Chicago Press, 1983); Martin Jay, *Downcast Eyes: The Denigration of Vision in Twentieth-Century French Thought* (Berkeley: University of California Press, 1993); W. J. T. Mitchell, *Picture Theory: Essays on Verbal and Visual Representation* (Chicago: University of Chicago Press, 1994).

19 Nicholas Mirzoeff, *The Right to Look: A Counterhistory of Visuality* (Durham, NC: Duke University Press, 2011); Simone Brown, *Dark Matters: On the Surveillance of Blackness* (Durham, NC: Duke University Press, 2015).

20 John Berger, *Ways of Seeing* (London: Penguin, 1972).

21 Jonathan Crary, *Scorched Earth: Beyond the Digital Age to a Post-Capitalist World* (New York: Verso, 2022).

22 Don Ihde, *Listening and Voice: Phenomenologies of Sound*, 2nd ed. (Albany: State University of New York Press, 2007); Walter J. Ong, *Orality and Literature: The Technologizing of*

tialist oppositions merely obscure our sensorial affordances. As enumerated in Jonathan Sterne's "audiovisual litany," hearing's alleged subjectivity is often juxtaposed with vision's alleged objectivity, hearing's activation of affect with vision's activation of intellect, and hearing's capacity to immerse us in the world with vision's tendency to remove us from it.[23] Yet as Sterne points out, there is nothing given to listening, or for that matter looking, that adheres to a normative or universal explanation of its psychic, emotional, or embodied character. Such allegedly sense-specific features are instead filters through which we assess our epistemological possibilities and justify those limits that we place upon them. So, while it is easy to condemn visuality for its practices of *intromission*, of capturing whatever it can surveil, this critique no less applies to audio-veillance or other acts of listening that can be every bit as extractive, possessive, and complicit in the reproduction of existing structures of power as any mode of visual observation.

It should be no surprise then that even as acts of looking and making visible have contributed to the production of settler colonialism, so too have acts of listening and making audible. Veit Erlmann describes an "ethnographic ear" that listens, records, transcribes, and imitates the colonized subject's soundworld as an example of auditory complicity. Such ethnographic ways of listening and recording were often an attempt to preserve, understand, document, archive, or transduce sounds, songs and voices that might otherwise be lost to the same colonial forces of which they were a part.[24] Such directed and specialized audile techniques couldn't help but enact a system of non-relational listening that is endemic to settler–Indigenous relations. Dylan Robinson describes this phenomenon in the Halq'eméylem language as *shxwelítemelh xwélalà*:m, roughly translated into the phrase "hungry listening."[25] A compound concept, *shxwelítemelh* refers to "a settler's starving orientation," while *xwélalà*:m refers to an Indigenous-specific mode of sensory perception. This phrase is a paradox, conjoining two ontologically distinct ways of hearing the world. Hungry listening is a disorientating suspended space of relation, a phenomenological effect produced and reproduced by settler colonialism that does not resolve and instead remains

the Word, 2nd ed. (New York: Routledge, 2002).

23 Jonathan Sterne, *The Audible Past: Cultural Origins of Sound Reproduction* (Durham, NC: Duke University Press, 2003), 16.

24 Veit Erlmann, "But What of the Ethnographic Ear? Anthropology, Sound, and the Senses," in *Hearing Cultures: Essays on Sound, Listening, and Modernity*, ed. Veit Erlmann (Oxford: Berg, 2004), 1–20.

25 Robinson, *Hungry Listening*, 3.

persistently unstable.[26] Such irresolution offers an opening for something else to emerge, a different orientation to the world, but for that otherwise way of relating to landscape and life to take hold the listening subject must first be unsettled. If the recursive act of looking, painting, and relating to land through the medium of landscape painting justified and strengthened a *terra nullian* ontology, the same has been true of listening, recording, and producing the phonographic depictions of the world we call field recordings. It's for these reasons that modern ways of seeing and hearing must both be problematized, troubled by a critique of orientation.

Pursuing Silence

If, as Robinson suggests, ethically listening as part of forming a broader ecological relationality is nothing new for Indigenous cultures, in the modern Anglophone world a comparable attention to the ecosocial dimension of sound is relatively recent. While a nascent modern environmental consciousness first became legible in nineteenth century American transcendentalism, it was made audible through the import of romantic and impressionistic movements in European classical music. Composers such as Claude Debussy, Bedřich Smetana, Antonín Dvořák, and Jean Sibelius forged connections between landscape and music, though often as an expression of nationalistic rather than ecological priorities.[27] It wasn't until the mid-twentieth century that the influence of Margaret Fuller, Ralph Waldo Emerson, Henry Thoreau, and the like found its musical equivalent in the techniques of American composer John Cage. His work had an immeasurable effect on Anglo traditions of music making, opening the way for stochastic processes of composition meant to be akin to a natural process, and nominating noise—nonrhythmic, dissonant, and polymorphous—as its own genre of musicking. Yet Cage's most profound contribution to modern music was centering listening in the work of composer and audience. Cage conjoined the concert hall and the open field into a "complex of overlapping musical and extra-musical elements, traces and influences."[28] In

26 Sarah Ahmed, *Queer Phenomenology: Orientations, Objects, Others* (Durham, NC: Duke University Press, 2006).

27 George Revill, "Landscape, Music and the Cartography of Sound" *The Routledge Companion to Landscape Studies*, ed. Peter Howard, Ian Thompson, and Emma Watson (London: Routledge, 2013), 231–40.

28 Revill, 235.

doing so Cage pushed the listener out of their position of rational distance and into the role of participant, self-consciously entangled in the sonic and social phenomena around them.

Cage's work inspired an explicitly ecological turn in compositional practices, exemplified by the acoustic ecology of Canadian composer R. Murray Schafer. As co-founder of the *World Soundscape Project*, Schafer attempted to record the world as humans apprehended it, both preserving and archiving sounds of environments that were in the process of transforming and perhaps disappearing. Schafer appropriated a vocabulary from visual culture to describe auditory phenomena in the terms of landscape, including "soundmarks" and, most famously, "soundscapes," this latter in direct parallel to its painterly equivalent.[29] Schafer even attributes a figure-ground relationship to the audible world, denoting the former as "signals" and the latter as an environment's "keynote." Schafer has rightly been criticized for his Eurocentric biases and racial blindspots (including his appropriative approach to the music of Native North Americans), yet his commitments to listening to the world, and by doing so championing the sonic environment as a space of contestation and one worthy of conservation, opened up one possible pathway towards transforming settler relations to space.[30] The practice of "acoustic ecology" inspired by his work has been used by environmentalist tactically for designating sites as worthy of protection, intervening in destructive military and industrial acoustic practices, even supporting the defense of sovereign Indigenous claims.[31] Broadly speaking, attention to the soundscape as an aesthetic practice has facilitated ways of

29 R. Murray Schafer, *The Soundscape: Our Sonic Environment and the Tuning of the World* (Rochester: Destiny Books, 1994); Mitchell Akiyama, "Transparent Listening: Soundscape Composition's Objects of Study," *Revue d'art canadienne/Canadian Art Review* 35, no. 1, (2010): 54–62.

30 For critiques of Schafer see Mitchell Akiyama, "Unsettling the World Soundscape Project: Soundscapes of Canada and the Politics of Self-Recognition," *Sounding Out!*, August 20, 2015, https://soundstudiesblog.com/2015/08/20/unsettling-the-world-soundscape-project-soundscapes-of-canada-and-the-politics-of-self-recognition/; Robinson, *Hungry Listening*, 1–5,155–6.

31 Sonic geographer Max Ritts collaborated with Indigenous youth in Gitga'at territory around Hartley Bay to document their traditional territories through phonography as a defense against regional resource extraction: see Ritts, *A Resonant Ecology* (Durham, NC: Duke University Press, 2024); Shayne Morrow, "Soundscape Recorded in Marine Territory Threatened by Tanker Traffic," *Windspeaker* 34, no. 5 (2016), archive accessed October 1, 2025, at https://ammsa.com/publications/windspeaker/soundscape-recorded-marine-territory-threatened-tanker-traffic.

listening that reorient listeners alienated from the world towards a cultivated sensitivity and awareness.[32] Through intentional listening practices and experiments in composition, artists have followed sound ecologists in pursuit of this phenomenology of presence, immersion, and integration into the multi-species web of life.

Perhaps owing to Cage's historical role in highlighting "non-musical sound," many contemporary artists use him as a starting point for their own investigations into the nature of sound and the sound of nature. Much of this work attempts to make audible a kind of emptiness, a soundscape of nothing misconstrued as an idealized silence. In the European Middle Ages the pursuit of silence was a retreat into an internal spiritual world, the cultivation of a quiet within, but in modern times it has become directed at systemic control of the external world, constructing and enforcing the quiet without.[33] This desire for a conditional quieting of external environments was synchronous with the tumultuous emergence of industrialization and urbanization. The modern pursuit of silence transformed the built environment and urban policing in service of bourgeoise desires to exclude the noise of the street, while simultaneously transforming rural land and wilderness areas into sanctuaries for those privileged few who owned property or who could escape the city for recreation.[34] These ideals of luxurious silence and solitude, on the one hand cultivated in English gardens and excursions into alpine wilderness, and on the other enforced by regimes of noise policing in the cities, were shipped from European metropoles to the settler colony.[35] In North America, the lands beyond the city and village were heard as a "howling wilderness," a vast torrent of weather, wolves and wild people who refused submission to the sovereignty of these visitors.[36] Reproducing silence required taming the wilderness, quieting the land and silencing the voices and drums of those who disrupted the peace of progress.

Today much of the Anglo-settler world has been transformed into a mirror of its European progenitor, the fields and woods emptied of inhabitation

32 Heidi Von Gunden, *The Music of Pauline Oliveros* (Metuchen: Scarecrow Press, 1983).

33 Alain Corbin, *A History of Silence: From the Renaissance to the Present Day* (New York: Polity Press, 2019).

34 Emily Thompson, *The Soundscape of Modernity: Architectural Acoustics and the Culture of Listening in America, 1900–1933* (Cambridge, MA: The MIT Press, 2002).

35 Rebecca Solnit, *Wanderlust: A History of Walking* (New York: Penguin Books, 2001).

36 Richard Cullen Rath, *How Early America Sounded* (Ithaca: Cornell University Press, 2003); William Cronin, *Changes in the Land: Indians, Colonists, and the Ecology of New England* (New York: Hill and Wang, 1983).

in favor of densely paved cityscapes and suburban sprawl. Urban space is definitionally noisy, full of combustion engines and amplified transduction, while the wild has remarkably come to signify quiet. Of course, noise continues to be policed in the city, a constant companion of racialized gentrification and social control. Meanwhile the reach of the urban has spread across the globe as wild places are despoiled and wastelanded by extraction, churned on by industries that in turn fuel the trucks, chainsaws, airplanes, and motorboats that fill the soundscape.[37] Silence has become a luxury item, a vacation or wellness treatment, an expensive piece of real estate, a consumer product in the form of "orphic media" promising to block out the world that it has all conspired to create.[38] Placed in opposition to noise pollution, silence has been elevated to an environmental ethic, and yet its function is as a measure of both human control and possession of the natural environment. All of this suggests that the pursuit of silence expresses a desire for non-relation. This is why artistic and ecological projects that aestheticize silence so often misrecognize Cage's interventions as a call for the suppression of sounds in pursuit of sonic purity.

John Cage's association with silence is in large part due to his exhaustively referenced composition, *4′33″*.[39] The work consists of a musical score for any instrumentalist or combination of instrumentalists, divided into three movements lasting any duration of time, each marked by a roman numeral and the instruction *tacet* indicating that the performer does not play during that movement. In its original performance, the three movements lengths (33", 2′40", 1′20") were allegedly determined by use of the I Ching and tarot, and the performer of the piece, David Tudor, was instructed to soundlessly open and close the piano's fallboard at the start of each movement, never playing a note or intentionally making a sound for the duration.[40] I won't rehearse the more commonplace understandings of Cage's piece: the novelty of appropriating the world as a sonic readymade, the rhetorical insistence that the world is never silent, or that listening is always an act of co-composition. Instead, I want to draw our attention to what was

37 Traci Brynne Boyles, *Wastelanding: Legacies of Uranium Mining in Navajo Country* (Minneapolis: University of Minnesota Press, 2015).

38 John Biguenet, *Silence* (London: Bloomsbury, 2015); Mac Hagood, *Hush: Media and Sonic Self-Control* (Durham, NC: Duke University Press, 2019).

39 Dieter Daniels and Inke Arns, ed., *Sounds Like Silence: John Cage, 4′33″. Silence Today: 1912, 1952, 2012* (Leipzig: Spector, 2012).

40 There is a good deal of ambiguity and discrepancy as to what the original or final version of the score would have been. See Gann, *No Such Thing as Silence*, 174–87.

being listened to at the first staging of the piece in Woodstock, New York in the late Summer of 1952 at the Maverick Music Hall.

We are more likely to experience or else imagine a performance of *4′33″* in a formal concert hall, self-conscious of the cacophony of breath, coughing, bodily shifts, and folding programs that we normally ignore. Yet Cage composed the piece in relation to a wholly different soundscape, a biophonic symphony that Canadian artist Paul Walde captures in his video *The Nature of Silence* (2012) by restaging *4′33″* in the same Maverick Music Hall on the 60th anniversary of its first performance.[41] In Walde's video, a stationary frame pictures an unattended grand piano enveloped in a dense sonic atmosphere of cicada, bird song, frogs, and other creaturely sounds. Walde's piece suggests that in its original context Cage's *4′33″* was less concerned with silence than with environmental sound, less concerned with acts of listening in a purely formal sense, and more concerned with the *affects* of listening in a broadly ecological sense.

Whereas classical European composition rends sound into an organized form that excludes whatever is unwanted, delimiting what can be heard as music, *4′33″* opens to the world as an animate sonic field full of compositional agencies. Much in the same way European painting traditions drew attention to a distinction between figure and ground, music in the same period attempted to distinguish between what ought to be listened to (as signal or "music") and what ought to be ignored (as noise). This latter abjected soundworld is what philosopher Michael Serres calls "the ground of perception," a "limitless, continuous, unending, unchanging" field of sound.[42] Serres' *Le bruit de fond* is similar to what Christoph Cox calls "the ceaseless *sonic flux*" the background noise out of which any meaningful signal must arise.[43] As Cox notes, "we tend to think of noise as something secondary or derivative … disruptive, disturbing an initial state of calm." Instead, he argues, noise is "a transcendental phenomenon, the condition of possibility for signal and music."[44] Given this, Cox says that *4′33″* "simply offers an auditory opening onto background noise, drawing attention to the sonic field ignored or concealed by everyday

41 Paul Walde, *The Nature of Silence* (2012), http://paulwalde.com/additional-works-and-projects/the-nature-of-silence/ (accessed November 16, 2025).

42 Michael Serres, *Genesis*, trans. Geneviève James and James Nielson (Ann Arbor: University of Michigan Press, 1995), 7, 13.

43 Christoph Cox, *Sonic Flux: Sound, Art, and Metaphysics* (Chicago: University of Chicago Press, 2018), 115.

44 Cox, 114–5.

hearing."[45] The first performance of *4′33″* then was drawing attention to the biophonic and geophonic field of upstate New York, Munsee Lenape territories, on a warm summer night in 1952. Rather than being reduced to the mere ground of audition in service of bohemian anthrophonic pleasures, Cages audience, as Walde's piece reveals, would have heard the dense sonic fields of living systems surrounding them as symphonies of inhuman noise.

In this interplay between sonic figures and ground, Cage uncovered a deep-rooted anxiety entrenched in America's settler colonial unconscious. The howling wilderness beyond the limits of the colony was deafening to early American settlers, evidence of the "untamed" nature of the *terra nullian* void outside their fortified settlements.[46] The domestication of the wild, its settling, was also its quieting. In practice this meant its devastation through harvesting, developing, and urbanizing a vast heterogenous landscape into grids of farmland, housing, and environmental sacrifice zones. Indigenous people were treated as a constituent part of this wilderness that howled, one more manifestation of the wild violence that needed to be subdued to manifest America's imperial project. As Patrick Wolfe bluntly puts it, the historical role of Indigenous people from the perspective of the European settler was "to disappear… to get out of the way, to be eliminated, in order that Europeans can bring in their subordinated, coerced labor, mix that labor with the soil, which is to say set it to work on the expropriated land and produce a surplus profit for the colonizer."[47] To the Anglo-American settler, a land which had not already been turned into spoils was *terra nullius*, an empty waste, and a people who refused to labor on that land for such purposes were not its actual inhabitants. Ignoring the obvious presence of established architecture and farming, and the perhaps more subtle transformation of the landscape through fire or hunting, these "non-inhabitants" were treated no differently than animals roaming the land, or else like trees to be hewn and cleared.[48] This is why silence cannot mean the same thing for the settler and the Indigneous person. As the settler world was made quiet, as millions of Indigenous people were killed by disease, war, and dislocation, the sounds that produced "indigenous spatialities" were likewise silenced.[49]

45 Cox, 123.

46 Rath, *How Early America Sounded*, 145.

47 J. Kēhaulani Kauanui and Patrick Wolfe, "Settler Colonialism Then and Now," *Politica & Società* 1, no. 2 (2012): 240.

48 Malcolm Ferdinand, *Decolonial Ecology: Thinking from the Caribbean World*, trans. Anthony Paul Smith, forward by Angela Davis (New York: Polity, 2022).

49 Natchee Blu Barnd, *Native Space: Geographic Strategies to Unsettle Settler Colonialism*

Nothing is Noisy

This historic silencing has not been complete. In fact, Indigenous life and cultural resurgence has become profoundly audible, from the circle drum demonstrations of Idle No More to the elevation of Indigenous leaders' voices in various governmental bodies.[50] Many contemporary Indigenous artists have explicitly embraced sound as a medium, including not only Chacon and his former collaborators in Postcommodity but also artists such as Suzanne Kite, Merrit Johnson, Tsēma Igharas, Geronimo Inutiq, Krista Belle Stewart, Jeneen Frei Njootli, Maria Hupfield, Jordan Bennet, Sonny Assau, and Rebecca Belmore.[51] Through their performances and soundworks many of these artists are engaging with landscape in ways that not only intervene in the primacy of modern European ways of seeing and listening, but also propose fundamentally different modes of relationship, what Candace Hopkins calls "listening otherwise," suggesting other possibilities of entanglement with the other-than-human world.[52] This is one available meaning behind Chacon's varied work on silence, perhaps made most explicit in his own ode to Cage, *Duet: for two musicians* (2000). Scored as a single page composition notated as a dynamically changing array of marked silences, it is performed by the two titular musicians in a silent interaction.[53] In his 1959 "Lecture on Nothing," Cage described this situation as a paradox:

What we re-quire is
silence ; but what silence requires
is that I go on talking .[54]

(Eugene: University of Oregon Press, 2017), 5–6.

50 Ken Coates, *#IdleNoMore and the Remaking of Canada* (Regina: University of Regina Press, 2015)

51 Many of these artists are featured in Jeffrey Gibson, ed., *An Indigenous Present* (New York: BIG NDN Press–DelMonico Books, 2023).

52 Candace Hopkins, "Heed the Call: A Score for Resistance," *Whitney Biennial 2022: Quiet as It's Kept*, exhibition catalog, ed. David Breslin, Adrienne Edwards, Gabriel Almeida Baroja, Margaret Kross, and Adam D Weinberg (New York: Whitney Museum of Art, 2022), 139.

53 Raven Chacon in conversation with Frank J. Oteri, "Raven Chacon: Fluidity of Sound," *SoundLives Episode 16*, New Music USA (June 29, 2022), https://newmusicusa.org/nmbx/raven-chacon-fluidity-of-sound/.

54 John Cage, "Lecture on Nothing," *Silence*, 109.

Chacon rejects this, insisting that even when not speaking we continue to be in dialog. In *Duet*, musically composed silence is not about withholding sound but rather about relating, being present in that relationship, and experiencing the world from in that condition.

In this piece and throughout Chacon's works exploring silence we are reminded that the true paradox of so-called silence is that it is conditioned on an already false assumption that nothingness exists. Cage also struggled to articulate this to his audiences, telling an audience in 1957 "try as we may to make a silence, we cannot" because producing silence requires the possibility of nothingness. "There is no such thing as an empty space or an empty time. There is always something to see, something to hear."[55] Yet in the wake of the long American project of dispossession that enfolded both Indigenous genocide and the mass abduction and enslavement of people from Africa, an ontological condition of nothingness has been imposed on the bodies of the decedents of these cataclysms. Black and Indigenous philosophers have labored to cut and recompose Aristotelian claims of *ex nihilo nihil fit*, that "nothing comes from nothing," as an unsettled and unfinished possibility. Fred Moten argues instead that "nothing will come from nothing" and it is in this spirit that *Duet* acts as a riposte to the *terra nullian* interpretation of silence as the soundscape of nothing.[56] To the contrary, it is a silence dense with intensities that must be felt, that require being present with silence. It is a reminder that, as Gertruid Stein once claimed, "nothing is noisy," that silence always returns to us as noise, and that this noisy silence will come from nothing.[57]

Perhaps Chacon's most emphatic assertion of this concept is heard in one of his earliest sound-based artworks, *Field Recordings* (1999). Chacon visited three sites within the Navajo Nation in the American southwest renowned for their visual beauty and stoic silence—Window Rock, Sandia Mountains, and Canyon De Chelly—and recorded whatever was there directly to DAT. He then re-recorded these sounds with their volume pushed to the absolute limit, "in the red" as Tricia Rose once called it, producing visceral effects of compression, distortion, and other sound events at extreme frequencies.[58] Chacon pairs appropriated images of these land-

55 John Cage, "Experimental Music," *Silence*, 8.

56 Fred Moten, *Black and Blur* (Durham, NC: Duke University Press, 2017), 152.

57 Gertrude Stein, *Selections*, ed. Joan Retallack (Berkeley: University of California Press, 2008), 250.

58 Tricia Rose, *Black Noise: Rap Music and Black Culture in Contemporary America* (Middleton, CT: Wesleyan University Press, 1994).

marks with shockingly abrasive recordings of their soundscapes. Instead of the quietude that these allegedly empty places are known for we hear harsh noise, a howling electronic wind, an evocation of the lands' lethal heat, rugged vitality, tectonic animacy and the bloody histories that predate their role as roadside vistas.[59] He draws out of the sonic flux a feral sound, indifferent to the 'civilizing' forces of the settler state whose roads, fences, and territorial designations attempt to erase the borders of the Navajo Nation even as they delineate spaces reserved for other use. The title of these works nod to the tradition of phonography practiced by twentieth century anthropologists, and to the archival methods of Schafer and the *World Soundscape Project*.[60] Rather than act to preserve a silence that is never truly there, Chacon's recordings transduce an altered perception of sonic reality, conveying intensities that are present but that may be inaudible to certain listeners.

It is possible that the powerful bursts of noise that project out of *Field Recordings* are meant to act as a heretical form of what Schafer called "ear cleansing." Schafer defined this practice as "exercises devised to help cleanse the ears," most important of which were "those that teach the listener to respect silence."[61] The harsh eruptions in Chacon's *Field Recordings* change our perception of silence, shocking us to attention in a way similar to the musically arranged rifle shot that constitutes Chacon's 2001 piece, *Report*. Composed for an ensemble of firearms, *Report*'s use of weapons as instruments demands we abdicate musical priorities like melody, tonality, even virtuosity, and listen otherwise to a suddenly altered soundscape. These shocking eruptions are followed by the long tail of the land's own reverberations, a kind of call and response reciprocation shaped by the land itself. In Dylan Robinson's poetic reading of this work, he writes,

59 "Harsh noise" is a genre of electronic music characterized by relatively undifferentiated amplified sound without melody or rhythm. See David Novak, *Japanoise: Music at the Edge of Circulation* (Durham, NC: Duke University Press, 2013). Chacon was immersed in the Los Angeles experimental music community during his study at Cal Arts and continues to collaborate with noise musicians.

60 Brian Hochman, *Savage Preservation: The Ethnographic Origins of Modern Media Technology* (Minneapolis: University of Minnesota Press, 2014); David W. Samuels, Louise Meintjes, Ana Maria Ochoa, and Thomas Porcello, "Soundscapes: Toward a Sounded Anthropology," *The Annual Review of Anthropology* 39, no.1 (2010): 329–45; *The World Soundscape Project*, accessed November 18, 2025, https://www.sfu.ca/sonic-studio-webdav/WSP/index.html.

61 Schafer, *The Soundscape*, 208.

let's clear the air
listening to land is not a pristine act
that finds the quiet wild
not the breeze stirring leaves,
not the falling snow as your heart beats
not the clairaudience
that filters out all but buzzing insect and rustling reed
that filters sound, that is, from land.[62]

The rifle shot is a reminder that land, even wilderness, is never quiet.

Elsewhere in *Hungry Listening*, Robinson argues that our perception of land, indeed our listening capacities themselves, have been settled through colonial formations of our sensory engagement with the world. The consequence of this is the compartmentalization of sense perception into discrete externalities, organized and ruled by the *cogito*. "Listening regimes imposed and implemented 'fixed' listening strategies that are part of a larger reorientation toward western categorisations of single-sense engagement, as well as toward Western ontologies of music located in aesthetic appreciation. […] Unifying these listening practices is the 'civilizing' drive for selective attention that renders listening as a process of the ear rather than the body."[63] In the case of *Report*, noise is a disruptive force that unsettles listening, a sound out of place in a space we are conditioned to expect to be empty. The shock of this rupture could incite a rejection of the settler's *starving orientation*, inspiring them to "find ways to listen not driven by use, not by accumulative desire."[64] This possibility holds the potential of a remembering, a becoming whole, that might jump scales, from the individual body to the social in the broadest possible terms.

However ameliorative such encounters might be for some settler listeners, it may not be enough to unsettle the hungry listening habits of a people alienated from the places that they live but don't fully inhabit. According to geographer Natchee Blu Barnd, *inhabitation* describes "a frame used for establishing belonging or home, a relation to place." As a set of "spatially

62 Robinson, *Hungry Listening*, 107.

63 Robinson, 40–1. I find Robinson's removal of the ear from the body confusing but assume he is trying to make a claim that Western sense-perception itself isolates listening in the primary sense organ. I think it would be more helpful to distinguish embodied listening from the Cartesian claims for sense-perception as a practice of mental cognition that is somehow distinct from a body.

64 Robinson, 109.

defined and relational set of actions," it is both a condition produced by these actions and description of what it means to take these actions.[65] Inhabiting is the act of living in the world and *being* that world without distinction. For the inhabitant, there is no separation between figure and the ground, nor signal and noise. The *terra nullian* worldview is intrinsically a failure to recognize inhabitation, or for that matter to practice it, making it impossible for anyone possessing that view to enter into a properly inextricable relationship with land and life. The emptying of settler space, the act of making a place nothing as a precondition of possession, requires a foundational condition of non-relation. What is negated through this emptying is not only a historical and contemporaneous recognition of Indigenous inhabitation, but a consciousness of the possibilities for life within this relation.[66] What shape an Indigenous sovereignty might take in the future above and beyond "landback" and different forms of self-determination remains unknown, but could include forms of social organization, governance, and relationality that offer a way out of the terror of contemporary forms of ecocide, nationalism, carcerality, and alienation.[67] For this possible future to be actualized, it requires something more meaningful than relinquishment of property or privilege; it requires abolition of the *terra nullian* settler ontology itself.[68]

The Terrifying Audibility of Space

Voiceless Mass, Raven Chacon's roughly 18-minute-long composition for pipe organ and large ensemble, had been co-commissioned by Wisconsin Conference of the United Church of Christ, Plymouth Church UCC, and performed in 2021 as part of new music ensemble Present Music's annual Thanksgiving concert event in Milwaukee, Wisconsin.[69] The significance of

65 Barnd, *Native Space*, 5–6.

66 Jordan Abel, *Un/inhabited* (Vancouver: Talon Books, 2015).

67 The Red Nation, *The Red Deal: Indigenous Action to Save Our Planet* (New York: Common Notions, 2021).

68 Sylvia Wynter, "1492: A New World View," in *Race, Discourse, and the Origins of America: A New World View*, ed. Vera Lawrence Hyatt and Rex Nettleford (Washington, D.C.: The Smithsonian Institute, 1995), 5–57.

69 Javier C. Hernández, "The Pulitzer Prize Winner That Emerged Out of a Time of Quietness," *The New York Times*, May 9, 2022, https://www.nytimes.com/2022/05/09/arts/music/raven-chacon-pulitzer-prize-music.html.

that national holiday was not lost on the organizers, nor Chacon who was the first Native American composer to be invited.[70] Indigenous activists have long contested Thanksgiving's central myth of a providential dinner hosted by the Wampanoag offering invitation, friendship, and sustenance to the newly arrived British pilgrims. Schoolchildren in the United States receive through this story the notion that New England, and thus American colonization, was a product of the pilgrim's flight from religious persecution and that their presence was welcomed by the generous hospitality of local inhabitants. Students typically don't learn that this version of events is make believe, or why this moment of peace and fellowship should have heralded centuries of genocidal violence and dispossession. Plague introduced by Europeans had already killed most of the inhabitants of the Patuxet village that the Pilgrims would occupy, and after receiving material aid upon arrival from the original inhabitants those pious settlers reciprocated by robbing their homes, their graves, and their land.[71] The voices of Wampanoag descendants and their account of America's birth in blood and betrayal has continually been silenced by a nation that refuses to reckon with either its past or present relationship to colonialism.[72]

Chacon's work responds to this founding violence that gave shape to America, confronting directly the role that puritanical Christianity and Church institutions of other denominations have had in centuries of Indigenous suffering. Rather than through overt remonstration Chacon accomplishes this through a weaving of silence and noise, summoning the presence of those masses of human and non-human relations whose voices have been extinguished.[73] Again, Chacon articulates through certain absences the presence of history. As with earlier work on and about and with silence, *Voiceless Mass* counters the emptiness of the landscape, insists on the sen-

70 Jim Higgins, "Guest composer creates 'Voiceless Mass' for Present Music's Thanksgiving concert," *Milwaukee Journal Sentinel*, November 18, 2021, https://www.jsonline.com/story/entertainment/arts/2021/11/18/raven-chacon-composed-voiceless-mass-present-musics-holiday-concert/8651526002/.

71 James W. Loewen, *Lies My Teacher Told Me: Everything Your American History Textbook Got Wrong* (New York: New Press, 1995).

72 Thomas Dresser, *The Wampanoag Tribe of Martha's Vineyard: Colonization to Recognition* (Charleston, SC: Arcadia Press, 2011).

73 "My impulse is to turn down any Thanksgiving invitation, not because I'm anti-Thanksgiving but because that's the only time we get asked to do stuff." Raven Chacon quoted in Grayson Haver Currin, "Upending Expectations for Indigenous Music, Noisily," *The New York Times*, August 15, 2022, https://www.nytimes.com/2022/08/15/arts/music/indigenous-experimental-music.html.

sible presence of those who can't speak in their language or sing in a choir, but whose withheld voices wholly inhabit the interstices between frequencies, between the tectonic bass and high-pitched tones that comprise much of the music. Within a long body of work that challenges audiences to listen otherwise, this orchestration is perhaps his most effective demonstration of the potential of withheld sound as a compositional tool. That withholding is an act of resistance and a form of protest that also pushes our listening capacities to their limits.

With a church organ as its central feature, *Voiceless Mass* is required to be performed in venues that necessarily draw attention to the Church's complicated relation to Indigenous life.[74] Beginning with the very first Columbian voyage, conversion and coercion in the name of spiritual salvation structured the murderous antagonisms between European and Indigenous people. European explorers arrived believing in a God-given right to possess, kill, and enslave under a "doctrine of discovery" made explicit in the Papal Bull of 1493.[75] From an initial landfall in the Arawak and Taino lands of modern-day Cuba, the Spanish empire consumed territory in all directions north and south, including the traditional homelands of the Diné in what became New Spain and eventually the Southwestern United States. There the Catholic Church established missions that, failing in their efforts to convert Indigenous people to the Christian faith and European ways of living, transformed into concentration camps with forced labor and violent abuse.[76] Many years after the mission system of the Southwest had been established, and many miles away, the Cathedral of St. John the Evangelist was built in Milwaukee in the midst of violent military disputes between the region's American settlers and Indigenous Peoples, including the Ho-Chunk, Neshnabek/Bodwéwadmi and diverse Algonquian and Siouan-speaking people from the plains along Lake Michigan where this church now stands.[77] Here too the Church played a part in the cultural era-

74 Vine Deloria, *God Is Red: A Native View of Religion*, 3rd ed. (Golden: Fulcrum Publishing, 2003).

75 Robert J. Miller, "The International Law of Colonialism: Johnson v. M'Intosh and the Doctrine of Discovery Applied Worldwide," *Canopy Forum*, March 30, 2023, https://canopyforum.org/2023/03/30/the-international-law-of-colonialism-johnson-v-mintosh-and-the-doctrine-of-discovery-applied-worldwide/; Robert J. Miller, *Native America, Discovered and Conquered: Thomas Jefferson, Lewis and Clark, and Manifest Destiny* (Westport: Praeger, 2006).

76 Klara Kelley and Harris Francis, *A Diné History of Navajoland* (Tucson: University of Arizona Press, 2019).

77 "Cathedral History," The Cathedral of St. John the Evangelist, https://www.stjohncathedral.org/index.php/history/.

sure of Native lifeways, silencing Native songs, Native languages, and the truth of Native history. It is within this broad and simultaneously specific historical and territorial context that *Voiceless Mass* was first staged.

As evident in video documentation, *Voiceless Mass* sees the musicians distributed throughout the vast central nave of the Cathedral, in among the columns and along the edges of the audience congregated in its center, creating an immersive and acousmatic effect.[78] A nearly subsonic drone is initiated by a piercing chime as the organist holds at length the lowest note on his instrument, a Nichols & Simpson apse organ built in 2005.[79] A complex interplay of acoustic instruments emerge introducing almost imperceptible tones of brass, woodwind, strings, and percussion gradually accumulating in density and harmonic complexity. Throughout, Chacon eschews traditional melodic development, instead focusing on timbre transformation and spectral manipulation, employing a harmonic language that is predominantly microtonal, with pitch centers constantly shifting and destabilizing. Instrumental voices emerge and recede from different corners of the room sounding out ethereal voices that merge into a singular collective sonic mass. Towards the composition's climax there is a perceptible shift in textural density, previously diffuse instrumental voices compressing into increasingly concentrated harmonic zones, emerging as an almost monolithic unity. By the work's conclusion, individual elements dissipate revealing their distinct acoustic complexities before falling into a near-silence, punctuated by a final thunderous mallet strike on a bass drum.

As its name suggests, *Voiceless Mass* is music haunted by the silence of its missing choir. The title invokes a congregation of persons whose capacity to speak has been robbed from them by historical violence. In particular, children stolen from Native families, taken to church-run boarding schools (or "residential schools" as they are called in Canada) where many died from abuse, and where those who survived could no longer speak their Native language with their families, or speak of the horrors of their experience in any language. Yet the implied silence of this absented choir is also conditioned by the inability of others to listen, the failures thus far of speaking truth and pursuing reconciliation. There is a paradox in Chacon's compo-

78 Raven Chacon, "Voiceless Mass," November 21st, 2021, premier at The Cathedral of St. John the Evangelist in Milwaukee, posted June 8, 2022, by Present Music, YouTube, https://www.youtube.com/watch?v=nctWwXbRvqM.

79 "Cathedral of St. John the Evangelist: Milwaukee, Wisconsin," Nichols & Simpson, Inc., https://www.nicholsandsimpson.com/stoplists/cathedral-of-st-john-milwaukee-wisconsin/ (accessed November 18, 2025).

sition, because this implied silence is made inaudible by the thick animate drones on either end of the human voice's audio spectrum, a density of noises borne upon the chthonic resonances of the lowest bass key on the church organ. The ghostly air surrounding these bass rumbles is threaded by highly constricted wind, string, and electronic instruments, a tapestry of atonal drones weaving at odd angles. The piece is colored throughout by percussion, from the high-pitched squeal of bowed cymbals soaring in a hallucinogenic flight over the groaning lower musical registers to the rumbling heartbeat of drums evoking distant ceremony, all of it punctuated by crystalline chime of bells. The composition directs our ears to the sounds missing from its vast frequency range, the terrifying audibility of empty space between different length soundwaves, the attending audience becoming attuned to the reverberant architecture's ricocheting tones. Listening to this emptiness one confronts what is missing—the singing community that gives the catholic mass its meaning.

This silent mass unfolds and enfolds countless others besides, a ghostly collective absence whose voices go unheard, unlistened to, muted in America. In this sense, the voicelessness of *Voiceless Mass* is a memorialization and a moment for reflection of the often-unheard experiences of Native people and their kin. It attempts to do so without ventriloquy, refusing to perform the ameliorative gesture of "giving voice to the voiceless."[80] Nor does its absence of voice denote a "moment of silence" in the sense that we have come to understand it as a quiet interruption in the noiseful everyday of our lives devoted to contemplation, remembrance and mourning. It is after all not a silent piece, and yet it does place a pause on its audience, a hiatus of sorts, in which the missing voices are contrasted against an imagined choral mass. In that pause, carried along rippling waves of subsonic beading tones and bird-flight droning atonalities, float the urgent implication of wordless speech. *Voiceless Mass* is a *parrhēsiastic* insistence, an attempt at paralingual truth-telling necessitated before reconciliation, much less justice, can be realized.[81]

80 As Chacon suggests, his intentions are quite the opposite: "In exploiting the architecture of the cathedral, *Voiceless Mass* considers the futility of giving voice to the voiceless, when ceding space is never an option for those in power." Hernández, "The Pulitzer Prize Winner That Emerged Out of a Time of Quietness."

81 Waziyatawin, *What Does Justice Looks Like?: The Struggle for Liberation in Dakota Homeland* (St. Paul: Living Justice Press, 2008); Michel Foucault, *"Discourse and Truth" and "Parrēsia"*, edited by Henri-Paul Fruchaud and Daniele Lorenzini, English edition by Nancy Luxon (Chicago: Chicago University Press, 2019).

Restless Silence

Erupting in the wake of cascading urban revolts from Occupy to the post-Ferguson movement for Black lives, the 2015 standoff against the Dakota Access Pipeline (DAPL) at the northeastern tip of the Standing Rock Sioux Reservation seemed to come out of nowhere and, to many Americans, be defending nowhere. The proposed oil and natural gas pipeline trespassed lands protected by the 1851 Treaty of Fort Laramie on its way to crossing beneath the Missouri River, the Standing Rock Sioux Reservation's source of drinking water, before connecting to an oil tank farm in Patoka, Illinois. In spite of active legal and political resistance from landowners, environmentalists, and Native communities, Energy Transfer Partners, the corporation responsible for the pipeline's construction, and various governmental bodies seemed determined to push the project through. At the confluence of the Cannonball and Missouri Rivers, 40 miles south of Bismark, North Dakota, the Sacred Stone Camp began in April of 2016 on family land stewarded by LaDonna Brave Bull Allard. This encampment became a beacon of resistance that would eventually call tens of thousands of self-described "water protectors" to the surrounding area, primarily tribal members from the region but also Indigenous people from across the globe alongside a notable number of settler allies. In the face of harsh winters and brutal police violence, the Standing Rock uprising succeeded in halting development of the pipeline for a year and continues to be a legal obstacle to its ongoing operation. Though the movement failed to stop the pipeline's construction, it succeeded in unifying Indigenous people in an unprecedented fashion and transformed popular understanding of Native people's lives in the U.S.[82]

The landscape across which the DAPL was being imposed had once been the recognized domain of a Lakota empire, Očhéthi Šakówiŋ, stretching from river valleys feeding the Missouri, across the great plains of the American west, to the giant lakes at its Western edge, its rolling grasslands and vast hilled expanses the profitable hunting grounds for dozens of Indigenous nations.[83] In the first half of the nineteenth century the Lakota experienced

82 Nick Estes, *Our History is the Future: Standing Rock Versus the Dakota Access Pipeline, and the Long Tradition of Indigenous Resistance* (New York: Verso, 2019); Jaskiran Dhillon and Nick Estes, eds., *Standing with Standing Rock: Voices from the #NoDAPL Movement* (Minneapolis: University of Minnesota Press, 2019). Dina Gilio-Whitaker, *As Long as Grass Grows: The Indigenous Fight for Environmental Justice from Colonization to Standing Rock* (Boston: Beacon Press, 2019).

83 Though its political center drifted further west, Ho-chunk and Neshnabek/Bodwéwadmi lands were part of the greater reach of Očhéthi Šakówiŋ.

a technological breakthrough that accelerated their ascendancy, becoming a horse-riding people who could transform the nearly boundless biomass of grassland into fuel for movement. The U.S. empire struggled to make footholds in this enormous territory, whether through war or commerce, resigning itself for over a century to the slow march of settlement and treaty negotiation. Quietly, Americans from out East eroded the viability of the Lakota way of life through enclosure and cultural genocide, until a series of late nineteenth century wars forced land concessions and capitulation to U.S. governance. The Lakota had succeeded at keeping America's counter-sovereign claim at bay in part by virtue of the land itself and its hostility to the lifeways imported from Europe. The vast emptiness of the landscape, compounded by winters harsh enough to snap trees, made homesteading difficult, while Lakota raids did the rest. Yet that same emptiness was the very condition for life in that made Indigenous power possible.[84]

Today these vast regions of plains and river valley have become, like much of Native America, a zone of extraction. The Bakken oil fields in the Dakotas have (re)fueled a U.S. economy long past its 'sell-by' date, extending the lifespan of the nation's fossil fuel infrastructure even as it threatens to transform the globe into an uninhabitable world. Before the effects of the COVID 19 pandemic the U.S. was removing 1.5 million barrels of oil per day from these fields in total disregard for the environmental consequences of such production. Oil pipelines like the DAPL form a vast matrix of volatile liquids streaming across the continent, snaking their way from industrial wastelands as far flung as the northern Athabasca Tar Sands in Cree and Dene Treaty 8 territory to ports East, West, and South. Navajo Nation has likewise been a site of constant struggle against ecocide, its lands and waters spoiled by industries extracting uranium, coal, oil and gas. These sacrifice zones are wounds on the surface of the earth, vast territories where all life within them has become collateral damage for Empire's further expansion.[85]

84 Pekka Hämäläinen, *Lakota America: A New History of Indigenous Power* (New Haven, CT: Yale University Press, 2019).

85 Ward Churchill, *Struggle for Land: Indigenous Resistance to Genocide, Ecocide and Expropriation in Contemporary North America* (Monroe, ME: Common Courage Press, 1993); Judy Pasternak, *Yellow Dirt: An American Story of a Poisoned Land and a People Betrayed* (New York: Free Press, 2010); Andrew Nikiforuk, *Tar Sands: Dirty Oil and the Future of a Continent*, rev. ed. (Vancouver: Greystone Books, 2008); Matt Hern and Am Johal, *Global Warming and the Sweetness of Life: A Tar Sands Tale* (Cambridge, MA: The MIT Press, 2018); Ryan Juskus, "Sacrifice Zones: A Genealogy and Analysis of an Environmental Justice Concept," *Environmental Humanities* 15, no. 1 (2023): 3–24.

Through the lens of corporatism and militarism the United States looks to the place where endless plains of grass once fueled the Lakota's expansion, as it does to the deserts, woodlands and rivers of Diné Bikéyah, and it sees nothing. It surveys these territories and judges them to be barren, empty and improperly used, a *terra nullius*. It then imposes this view through wastelanding, the lands now overrun by cattle, spotted with wind capturing turbines, submerged by lakes made from hydroelectric dams, and dug up for mineral wealth. The standoff that took place at Standing Rock was a refusal to concede to this fracturing of land and life, to acquiesce to dispossession and endless expropriation, to accede that this land is nowhere.

The shared conditions of sovereign struggle in defense of land and life are why tens of thousands of Indigenous people heeded the call and converged on Standing Rock. Raven Chacon was one of them and was witness to some of the most significant moments of confrontation between the movement and the state. He was present for a standoff on November 26th, 2016, when hundreds of water protectors congregated on Highway 1806 facing off corporate security and police. In a photo taken by Chacon at the scene one can see an array of heavily armed police and armored vehicles blocking access north, faced down by a crowd of unarmed, mostly seated protectors, banners flying above in the cold wind. As relayed by Candace Hopkins, the gathered crowd stood their ground in silence, in a pointed contradistinction to the sonic weaponry that the police forces had unleashed against the crowd the day before.[86] The police used noise for psychological effect—sirens, amplified commands, barking dogs, and the buzz of drones triggering unease and fear—but also to cause pain, targeting the crowd with their LRAD (Long Range Acoustic Device), a hyper-directional sound cannon that is among an array of "less-lethal" weapons sanctioned for use as crowd control.[87] Chacon documented the crowd's silent protest in a 12 minute field recording which he exhibited as *Silent Choir* (2021) during the 2022 Whitney Biennial. One hears Chacon's breath, the shuffle of his body, the adjustment of his hand on the recording device. Listening more deeply, one hears an extended moment of quiet interrupted by bodies crowded together,

86 Hopkins, "Heed the Call."

87 The LRAD can send a soundwave up to a mile. Its effects can range from mental distress to physical pain, even making targets' ears bleed. Wes Enzina, "I Witnessed Cops Using Tear Gas, Rubber Bullets, and Sound Cannons Against Anti-Pipeline Protestors," *Mother Jones*, October 31, 2016, https://www.motherjones.com/politics/2016/10/standing-rock-protests-pipeline-police-tasers-teargas/; James E. K. Parker, "Towards an Acoustic Jurisprudence: Law and the Long Range Acoustic Device," *Law, Culture and the Humanities* 14, no. 2 (2018): 202–18.

by the wind, and by the mechanical roar of combustion engines. An echo of his *Field Recordings* project detailed above, the audio in *Silent Choir* is dense with the pressure of historical time.

Silent Choir records a soundscape with no keynote, a document of an event notable because of what didn't happen, because of its voiceless intensity insisting that there is power in collective silence. The silence that Chacon evokes in his work is the disquiet of a people who refuse to not exist. There is an interrelation here, between this choir composed of bodies on a road in North Dakota, voicelessly singing their resistance to ongoing colonial enterprise, and the missing church singers absent from Cathedral of St. John in Milwaukee. The silent choir, like the voiceless mass, is a congregation whose song is audible without sounding, refusing to speak in the language of sorrow, redemption, or forgiveness as we might otherwise expect. *Voiceless Mass* followed in the wake of the Standing Rock camp's dismantling, in a period when water protectors and land defenders were dispersed from that site to struggle elsewhere, when a new silence took hold in the form of the global pandemic and the world-wide shutdowns that sought to eliminate its spread. For a people who had already experienced such catastrophic viral death, Covid was an unwelcome return, exponentially destructive in Indigenous communities already depleted of services and overwhelmed with deleterious health effects from pollutions, poor nutrition, and an epidemic of despair driven substance abuse.[88] Yet even in this moment of often unheard grief and loss, masses of voices rose up in a groundswell of resistance. The "mass" summoned by Chacon's work is thus also constituted by "the masses" manifest in what became a global uprising.

Their bodies vulnerable to state violence, their deaths ungrieveable, their homes and communities devalued, the *terra nullian* ontology of the settler state and racial capitalism seemed for a moment to be at its limit. That uprising that gave voice to the silenced, that demanded a different kind of listening from power, emerged from social classes that had been relegated to a status of nothingness and places that had been made nowhere. For these

88 Simon Romero, "Checkpoints, Curfews, Airlifts: Virus Rips Through Navajo Nation," *The New York Times*, April 9, 2020, https://www.nytimes.com/2020/04/09/us/coronavirus-navajo-nation.html; Mark Walker, "'A Devastating Blow': Virus Kills 81 Members of Native American Tribe," *The New York Times*, October 8, 2020, https://www.nytimes.com/2020/10/08/us/choctaw-indians-coronavirus.html; Farina King and Wade Davies, eds., *COVID-19 in Indian Country: Native American Memories and Experiences of the Pandemic* (Cham: Palgrave Macmillan, 2024).

insurgents, silence wasn't a choice but a condition of power. This is the root of Chacon's departure from Cage, Schafer, Oliveros and other proponents of silence and the restorative act of deep listening. "Maybe we can't all be silent. Maybe silence means different things to different people." Instead of asking how to redistribute the privilege of an aesthetic silence, Chacon urges us to attend to the world as it is, asking "what it would mean to deep listen in a time of crisis, or emergency."[89] Perhaps it's no surprise that were we to listen to crisis we would hear the tumult of protest all around us. Such moments of insurgent noise, of tumult, are always there in the sonic flux, audible even in the restless silence, emerging from the unsettled landscape surrounding us. Thus, even in this too late stage of capital-driven climate crisis, of colonial wreckage, there is a collective constitution whose notional silence is a misapprehension.

89 Eshun, "On Land," 42.

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Abstract

Raven Chacon's 2022 Pulitzer Prize winning composition *Voiceless Mass* is only one of many works he has created to engage with cultural and political conceptions of silence. Far from denoting a lack of sound, silence in Chacon's work often is full of noise that requires different forms of listening. In what follows I argue that Chacon's use of silence is a direct challenge to the visual and sonic legacy of European landscape art and to a *terra nullian* ontology that perceives land as empty. In doing so Chacon's work aligns with a resurgence of Indigenous resistance to settler colonialism and its extractive logics that reached a climax with the resistance to pipeline construction at Standing Rock. By listening to Chacon's works that engage in silence we can hear a theory of relationship to the land that insists on its sacred fullness of life.

Gabriel Saloman Mindel is an interdisciplinary artist, musician, and scholar based in Minneapolis, USA. His artistic and scholarly research explores the relationship between noise, protest, and power His most recent writing includes an article about concerts performed across national borders and a forthcoming book about Prince, revolution, and the end of the world. In 2026 his group Yellow Swans will be artists-in-residence at *Groupe de Recherches Musicales* in Paris. He received an MFA from Simon Fraser University's School for the Contemporary Arts, a PhD in the History of Consciousness from the University of California Santa Cruz, and he is currently a Visiting MFA Faculty at Minneapolis College of Art and Design.
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