



Aura Satz
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In her second exhibition with the gallery, Aura Satz focuses on recalibrating listening, through voices of female electronic music pioneers, and on sound signals as symbols of communication and disobedience. The exhibition includes a series of drawings, two sound sculptures, and a 16mm film.

Dial Tone Drone (2014) is a sound piece for telephone, originally commissioned to play from the 1924 red telephone kiosk. Featuring conversations with composers Laurie Spiegel and Pauline Oliveros, set against excerpts of their drone compositions, the piece examines the dial tone as a vehicle for connecting voices, tuning in, and listening to sustained notes.

She Recalibrates (2018) is a series of drawings of hands of women who contributed to the development of electronic music, including Pauline Oliveros, Laurie Spiegel, Eliane Radigue, Delia Derbyshire, Daphne Oram, Maryanne Amacher, Wendy Carlos and more. The dial becomes an emblem for recalibration, an indicator of the micro-perceptual act of sound-making and fine-tuned listening. Drawn in pencil on black paper, the drawings are framed within lenticular lenses to generate a diffractive pattern emanating from the dial.

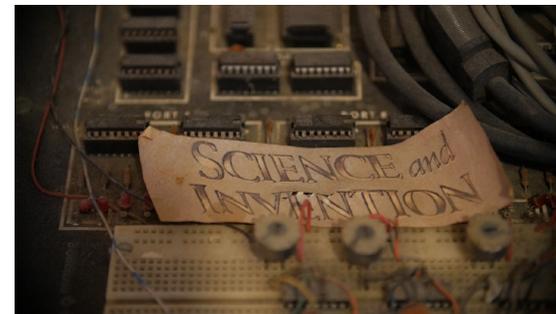
The Wail that was Warning (2018) is a sound sculpture in which five hand-cranked sirens are daisy-chained, each tuned to a different RPM to generate a spectrum of sounds that oscillates between a growl, a moan, a howl, a wail, a scream and a siren. The siren's ambiguous temporality, warning of future dangers and mourning of tragedies past, is enmeshed with its non-human associations, recalling different affective qualities of animal or non-verbal communication. The sculpture gives rise to different possible readings of the siren, beyond a simple call to attention or a marker of civil (dis)obedience.

Preemptive Listening (part 1: The Fork in the Road) (2018) is a short film which serves as part 1 of a larger project reimagining emergency signals. For this first chapter of the project, Lebanese trumpet improviser Mazen Kerbaj has composed a new siren sound using circular breathing, alongside the actor and activist Khalid Abdalla's account of the siren as the emblematic sound of resistance, oppression, and lost futures during the Arab Spring. Shot on 16mm, the film is literally driven by its soundtrack, as the voice becomes a beacon activating emergency rotating lights.

The Hand Listens

David Crowley

Listen, Recalibrate, Aura Satz's new series of drawings are portraits fashioned from details. Most derive from publicity for electronic music presenting a composer at work in a studio surrounded by banks of dials, switches, tape reels and faders. Satz's gallery of *immortelles* features Delia Derbyshire, Daphne Oram, Laurie Spiegel, Pauline Oliveros, Éliane Radigue, Maryanne Amacher, Suzanne Ciani, Wendy Carlos, Beatriz Ferreyra, Else Marie Pade, Micheline Coulobme Saint-Marcoux and Tara Rodger. Some were 'pioneers' of electronic music from its early days in the 1950s and 1960s, and others are still active today. All are women.



Little Doorways To Paths Not Yet Taken, 2016, film still. A short film about Laurie Spiegel

Satz's portraits include many women who enjoyed little public acclaim, even within the rather recondite field of electronic music. Only occasionally did they occupy centre stage (Wendy Carlos attracting the brightest lights). Their recordings were only rarely issued at the time of their creation. A 1970 'Electronic Panorama' of new music from around the

world was issued on the Philips Label: not one woman featured among the 26 contributors to the four LP box set. And yet, as Christoph Cox notes, women 'have been much more than a token presence within the experimental tradition and have produced work as significant as that of their male counterparts.'¹

In one sense, Satz's *Listen, Recalibrate* forms part of a larger recuperation of these women and their work in recent years. But this drawing cycle asks more of its viewers than simply to pay homage. Satz's drawings are presented behind magnifying lenticular sheets and in precise circular frames. The optical effect of the grooves on the transparent disks is an invitation to the viewer to move to find the point at which the image resolves (not unlike the pleasure of turning a CD in the hand to see diffractive patterns on its surface). In effect, the viewer has to tune in to the visual signal of Satz's circular dials. The drawings record a repertoire of gestures involved in the work of the composer in the studio: the turn of a dial to change the frequency of a pulse; the careful splicing and editing of magnetic tape to combine sound clips; or the depression of keys on a keyboard to effect tempered pitches. Working the instruments of the studio, the hands also signal close listening. Hands and ears sculpt disembodied sounds - either generated entirely

electronically or abstracted from concrete sources - to form acousmatic compositions. Working as a producer and composer of soundtracks for Danish Radio from the mid 1950s, Else Marie Pade returned to the studio 'after hours' to work on her own compositions.

They include early experiments like 'Seven Circles' (1959) in which a serial pattern of notes is shifted, accelerated and layered over seven cycles according to a careful set of calculations. Its score is an exercise in geometry and tabulation. Pade relished the 'microscopical precision' afforded by the studio's instruments: 'The possibility to achieve the exact pitches you want to manipulate, so that they match fully with your own perception of pitch. The sounds that I'm looking for can have an airy character, but still be very concrete.'² Others stressed the improvisation which was required in the early years of electronic music. Éliane Radigue worked as a voluntary assistant for Pierre Henry in Paris at the end of 1960s. In return, Henry gave her two first generation tape recorders which, though limited, were 'tough enough to support feedback experiments'. Radigue set up a small home studio, working intensively with tape techniques of speed manipulation, overlaying and feedback. 'Sometimes,' she recalls, 'it was enough to touch one of the recording or playback potentiometers to develop a sound. In this way, I discovered the pleasure of a work made with the tip of the fingers.'³

By centring in on the hands, *Listen, Recalibrate* allows for a kind of pulling back too. Where else have we seen these hands? Where are these gestures also made? The image of the hand operating the console was one of the key signifiers of the information revolution of the second half of the twentieth century. It was the harbinger of both dreamworld and catastrophe: push button technologies promised 'miracle kitchens' and, at the same time, Cold War command and control centres threatened planetary annihilation. In the "third industrial revolution", the dial inferred new relationships between people and machines based on automation and cybernetic regulation. The role of the human in future manufacturing, agricultural and transport systems was to become that of an overseer in a clean, frictionless world. This promise was also underscored by existential anxiety: the image of the fallible human being replaced by new forms of automata was the subject of doomy prophecies in the 1950s and 1960s. In his essay 'Some Moral and Technical Consequences of Automation', Norbert Wiener, for instance, reflected on the threat to humanity posed by cybernetic machines: 'It is quite in the cards that learning machines will be used to program the pushing of the button in a new pushbutton war.'⁴ In this scenario, a thinking machine commands the console; in other words, it commands itself. The potencies of utopia and disaster were also invoked in discussions of new electronic music. In 1970, French writer and composer Maurice Fleuret, described the turn of the dial in euphoric - even cosmic - terms in publicity for the 'Electronic Panorama' box set:

Time and space shrink. Tokyo can hear what is happening at any instant in Paris. Turn a knob and you can be at the ends of the earth, or even on the moon. ... The

walls dissolve, the ceiling vanishes, and we are released on the flying carpet of the sound-dream; all kinds of geographic, historical, and acoustic perspectives are open to us. Fiction outstrips reality at the gallop. The eye listens, the ear sees: a new sense is given us.⁵

Electronic music would not only expand human capacities, it was, it seems, even capable of recalibrating the senses.

Writing two years later, British composer Daphne Oram was more circumspect, warning of a 'world where freehand, empirical, human control is withdrawn and everyone (and everything) is submitted to total permuted "logical" control by computers. It appears an arid, cold, inhuman world to me and not what I would choose; but others may prefer it and certainly in the 1950s it looked as if the world was heading in that direction.'⁶ She welcomed the spread of aleatoric techniques in the composition of music in the years since, whether the 'spin of the coin' or 'the random number table housed in the computer.' Such techniques would 'keep much of the responsibility out of the freehand human control but escape the regimentation of total serialisation.' They would ensure 'a feeling of individuality which is not arrogant, not conceited, but is based on inner conviction and faith, based on what lies *beyond*.'⁷



Oramics: Atlantis Anew, 2011, a short film about Daphne Oram and the Oramics machine

Pauline Oliveros, celebrated for her 'sonic meditations' (group listening exercises) and 'telepathic improvisation' techniques, began her work in electronic music. Her sense of *the beyond* began there. Experimenting with signal generators working beyond the range of human hearing to create electronic music from ghostly combination tones in the mid 1960s, Oliveros was accused of 'black art': the director of the studio where she was working unplugged her amplifiers.⁹ Perhaps the director found something unnerving in the composition. Certainly, Oliveros's recordings from the mid 1960s - often created live in the studio - have qualities which challenge description. Music critic Frances Morgan writes: 'Some times when I listen to Oliveros's early electronic works, I think about how I can only explain certain audio phenomena or functions on a synthesizer by gesture - by demonstrating on a machine or, in the absence of something with dials and knobs, by waving my hands around, drawing shapes in the air.'¹⁰

Oram, like other composers and musicians portrayed by Satz, pulled away from the carefully controlled world of precise instruments towards New Age thinking - *to what lies beyond*. Else Marie Pade imagined 'that the stars and the moon and the sky uttered sounds and those turned into electronic music.'⁸ American musician and composer

Requiem for the Siren

Christoph Cox

For many of these composers, electronic music seems to have been less a way of producing calculated sonic effects than a kind of unstable threshold between worlds. Oliveros, Radigue or Oram at the console call to mind German sociologist Georg Simmel's brilliant essay 'The Handle' ('Der Henkel', 1911).¹¹ Reflecting on those things like vessels which invite holding, he came to the conclusion that for all their purposefulness, these 'interfaces' act as a kind of portal between worlds of utility and fantasy, and between ordinary material and ineffable immateriality. Simmel was drawn to organic forms, imagining the ceramic stem of a handle as a kind of extrusion of nature and of the body. Potentiometers and mixers - clad in plastic and accompanied by gauges and numeric scales - don't lend themselves to this order of naturalism. Nevertheless, for Oram at least, they opened up a kind of posthuman imaginary: 'We might now perhaps wonder further - wonder whether the human body is one vast "tuned circuit" embodying within it all these millions of smaller tuned circuits. (Maybe the spinal column is the coiled wire; maybe the brain ... (the frontal lobes?) ... and the solar plexus (with the sexual organs?), are the plates of the capacitor?).'¹² Rather than being simply instruments managing electric and sonic flows, perhaps the studio dials and switches - which have drawn Satz's attention - might be understood as valves for the body too. Composer Annea Lockwood said something similar when she wrote these words to Oliveros: 'Seems possible to me that however intensively we compose with them and process them, sounds process us much more deeply. And so far I know so little of the changes which go on when sound goes through me.'¹³ These composers embraced the kind of disordering - of music, of themselves of spaces, and of the social world - which these electronic thresholds invited. These effects were not merely accidental or impetuous. After all, she recalibrates.

¹ Christoph Cox, 'A La Recherche d'une Musique Feminine' in *Her Noise*, ed. Anne Hilde Neset and Lina Dzuverovic-Russell (London: Forma, 2005), pp. 7-13.

² Pade interviewed in the *Ja Ja Ja* (4 November 2014) <https://jajajamusic.com/magma/else-marie-pade> - accessed August 2018.

³ Radigue interviewed in 'A Portrait of Éliane Radigue' (2009) issued on DVD by Institut für Medienarchäologie, Hainburg, Austria.

⁴ Norbert Wiener, 'Some Moral and Technical Consequences of Automation' in *Science*, vol. 131, no. 3410 (6 May 1960), p. 1356.

⁵ Maurice Fleuret's sleeve notes for the "Electronic Panorama" 4 LP box set, issued by Philips, 1970.

⁶ Daphne Oram, *An Individual Note of Music, Sound and Electricity* (London: Gaillard, 1970), p. 58.

⁷ Ibid

⁸ Sleeve notes on Else Marie Pade. *Electronic Works 1958-1995*, CD, Important Records, 2014.

⁹ Pauline Oliveros, 'Some Sound Observations' in *Software for People*. Collected Writings 1963-1980 (Baltimore MD: Smith Publications, 1979), pp. 26-7.

¹⁰ Frances Morgan, 'Diffuse, open and non-judgmental: Frances Morgan on Pauline Oliveros's early electronic music' in *The Wire* (December 2016) - <https://www.thewire.co.uk/in-writing/essays/Pauline-Oliveros-Frances-Morgan> - accessed September 2018.

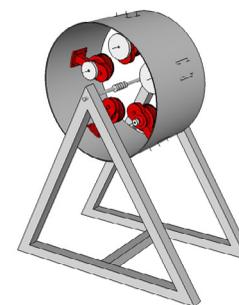
¹¹ Georg Simmel, 'The Handle' (1910) in *The Hudson Review* Vol. 11, No. 3 (Autumn 1958), pp. 371-385.

¹² Oram, *An Individual Note of Music*, p. 121.

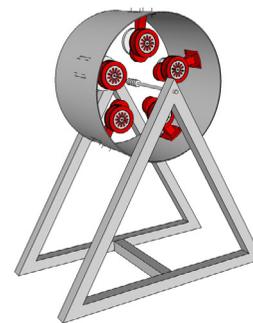
¹³ Annea Lockwood letter to Pauline Oliveros (9 May 1970) in Martha Mockus, *Sounding Out: Pauline Oliveros and Lesbian Musicality* (London: Routledge, 2011), p. 57.

Something calls us to attention: a rustle in the dark, a voice, a siren. Suddenly or gradually, a phenomenon emerges from the sonic backdrop, a figure against the ground, a sound from the silence, a signal from the noise. Evolutionarily, we are keyed to these alerts. But what if we were to attend to the latter, not to signal but to noise, not to sound but to silence, to what filmmakers call "room tone" or what is sometimes called "background noise"? For more than a century, sound artists have been doing just this, considering noise and silence not simply as alternatives to music and speech but as their conditions of possibility.

Aura Satz attends to both these registers at once, listening to noise and to signal and tracking the aesthetic, political, and technological significance of transitions from one to the other. In *Dial Tone Drone*, for example, Satz engages two pioneering sonic explorers, Pauline Oliveros and Laurie Spiegel, in a conversation about noise and telephonic communication. The dial tone, Oliveros and Spiegel point out, is an ambiguous sound, at once signal and noise. It announces the possibility of communication but remains ancillary to it. As a complex drone, it is kin to the background noise or silence from which all signals spring and into which they inevitably recede. Indeed, for Oliveros, the dial tone opens us to a more global and inclusive attention that would take into account not only speech and signal but what she calls the entire "sonosphere," the total set of vibrations radiating from the earth's core to its atmosphere.¹



The Wail That Was Warning, 2018, siren sound sculpture



In other recent projects, Satz has turned her attention to attention itself and to the economy of attention in which we are caught today. Several of these works focus on the siren, that signal intended to command attention in a perceptual landscape in which our awareness is relentlessly distracted and dispersed. Broadcast from police cars and emergency vehicles, the siren is an assertion of power and authority. But Satz provokes us to hear the siren otherwise. Her sound sculpture *The Wail that Was Warning*, for example, makes audible the connections between the siren's wail and the animal groans and feminine cries that, historically, have been figured as disrupting or undermining



The Wail That Was Warning, film still, 2017

civic order.²

The siren's wail is temporally and spatially ambiguous as well, pointing toward a traumatic event that has already occurred, not here but there. As the Anglo-Egyptian actor and activist Khalid Abdalla notes in Satz's film *Preemptive Listening (Part 1: The Fork in the Road)*, the siren is an intense sound that encapsulates what was, what could have been, and what might still be. Indeed, perhaps the siren is a sound of the past, a nostalgic sound, the sound of a modernity now gone.

At 8:07 a.m. on January 13, 2018, the Hawaii Emergency Management Agency issued a dire warning: "BALLISTIC MISSILE THREAT INBOUND TO HAWAII. SEEK IMMEDIATE SHELTER. THIS IS NOT A DRILL." The threat set off a panic among Hawaii residents and vacationers, many of whom sent farewell messages to family and friends. Two minutes later, the Hawaii National Guard confirmed that there had been no missile launch and officials canceled the alert. A second emergency message came at 8:45; "There is no missile threat or danger to the State of Hawaii. Repeat. False Alarm."³

All these warnings were conveyed silently. No civil defense sirens were sounded and no "all clear" signals broadcast. Instead, the warnings were delivered to cellphone screens as text messages—the first in all caps, the second in lowercase.

As a system of public warning, the siren was a technology of the 20th century. The device itself was invented in 1799 but was used primarily as a musical instrument until the early 1900s, when firefighters began to employ rotary sirens on emergency vehicles to cut through the din of the modern city. Like village and church bells before them, the siren was a means of acoustic communication. But the bell served a broad public function, announcing significant events in a community: births, deaths, baptisms, feast days, etc.⁴ By contrast, the siren broadcast only danger and distress. Loud and abrasive, sirens became the means by which civic authorities could command the attention of the populace as a mass. The sharp attack and long reverberation of the bell was replaced by the siren's wailing glissando, which became a signature sound of the modern city.

Homer depicted the mythical sirens as both seductive and dangerous and thus, in the patriarchal imagination, as female. Within earshot of the sirens'

"urgent call," Odysseus ordered his shipmates to plug their ears with beeswax to avoid being lured to their deaths. Odysseus himself, however, wished to experience the sirens' "enchancing" and "thrilling" sound, and thus commanded his crew to tie him to the mast as his ship sailed past the ominous island.⁵ In the 20th century city, ordinary citizens plugged their ears as sirens howled past. But avant-garde composers such as Henry Cowell, Luigi Russolo, Edgard Varèse, and George Antheil heeded the siren's call like latter-day Homeric heroes, hearing in its glissandi the true music of modernity. Several of Russolo's hand-cranked noise instruments (*intonarumori*) are modeled on the siren, which the painter-composer celebrated for its enharmonic sweeps.⁶ Sirens are also the signature sounds of Varèse's *Amériques* and *Ionisation*, written soon after the composer's move to New York City in 1916, and of Antheil's *Ballet Mécanique*. For all these composers, the siren blurred the lines between music and noise, allowed them to burst the bounds of the chromatic scale, and anticipated electronic music.

Sirens remained key components of the urban soundscape throughout the 20th century, warning the public of emergency vehicles speeding toward some local point of drama or trauma. During World War II and the Cold War that followed, the sound of the siren came to signify a more generalized threat. Air-raid sirens warned of imminent aerial bombardment, while civil defense sirens heralded tornadoes and nuclear war.

Despite its prominence, the siren was not a very effective tool. It sounded an alarm, but its source was often difficult to locate and its meaning unclear. Its general effect, then, was indeterminate panic. In the 1970s, the sound artist Max Neuhaus attempted to remedy this problem, undertaking experiments to replace the siren's continuous glissando with spaced bursts of sound that were more pleasant to hear and made emergency vehicles easier to locate.⁷ In the end, however, no siren manufacturer or civic agency was willing to adopt Neuhaus's sound designs. The powers that be seemed to prefer the aggressive authority of the siren's wail over any more functional and aesthetically pleasing alternative.

While Neuhaus was experimenting to improve the siren, its demise was already underway due to broad social, economic, and technological developments. The neoliberalism that took hold in the 1970s privatized public services, spaces, and functions. Sound and music became increasingly privatized as well, a process emblemized by the invention of the Walkman in 1979. Thanks to this little device and its heirs, the public sounds of the city could be blocked out and the musical concert abandoned, replaced by the individualized sonic selections of myriad headphone or earbud wearing consumers who no longer inhabited a common acoustic space. In a weird twist, then, portable audio devices enable a collapse of the two alternatives in Homer's tale: listeners now plug their ears like the oarsmen, while at the same time hearing the private concert given to Odysseus by the mythical sirens.

This privatization of listening goes hand in hand with the direct marketing of products and micro-targeting of information facilitated by data mining. In an astonishingly prescient essay written in 1990, Gilles Deleuze saw these developments as signaling a new form of power.⁸ It was no longer the centralized and public exercise of power characteristic of what his friend Michel Foucault called *sovereign* power, which was prevalent in medieval and early modern Europe; nor was it the institutional confinement and normalization that characterized the *disciplinary* power dominant in the 19th century and most of the 20th. The new regime of power that emerged in the 1980s took the form of a free-floating micro-surveillance that, following the writer William S. Burroughs, Deleuze called *control*. Control societies work by amassing data about our purchases, preferences, and locations, monitoring our keystrokes and card swipes to generate more and more fine-tuned profiles. Control doesn't address the public as a mass. Instead, it addresses each individual as a continuously updating and unique collection of data.

So it's not surprising that, in societies of control, power no longer communicates through generic public address but through messages sent to each of us individually via our cell phones, those personalized bundles of data each of us carry around in our pockets. In societies of control, the siren is perhaps becoming a relic, the auditory trace of a past in which the public constituted a mass. What was once the sound of modernity is becoming what the sirens' song was for Odysseus: a nostalgic sound. No longer a central emanation from bell towers, civic buildings, or police vehicles, the siren is increasingly silenced, delivered to each of us privately and individually as a mute, textual *alert*.

¹ See Pauline Oliveros, "Auralizing the Sonosphere, A Vocabulary for Inner Sound and Sounding," *Journal of Visual Culture* 10, no. 2 (August 2011), pp. 162–68.

² See Anne Carson, "The Gender of Sound," in *Glass, Irony, and God* (New York: New Directions, 1995), pp. 119–42.

³ Amy B. Wang and Brittany Lyte, "'BALLISTIC MISSILE THREAT INBOUND TO HAWAII' the Alert Screamed. It Was a False Alarm," *Washington Post*, January 13, 2018, https://www.washingtonpost.com/news/post-nation/wp/2018/01/13/hawaii-residents-get-ballistic-missile-threat-messages/?utm_term=.bc21ea30acfe

⁴ See Alain Corbin, *Village Bells: Sound and Meaning in the 19th-Century French Countryside* (New York: Columbia University Press, 1998).

⁵ See Homer, *The Odyssey*, trans. Robert Fagles (New York: Viking, 1996), Book 12, lines 172–217.

⁶ See Douglas Kahn, *Noise, Water, Meat: A History of Sound in the Arts* (Cambridge, MA: MIT Press, 1999), pp. 87–88.

⁷ See Max Neuhaus, "Sirens," *Kunst + Museum Journal* 4, no. 6 (1993), <http://www.max-neuhaus.info/soundworks/vectors/invention/sirens/Sirens.pdf>

⁸ Deleuze, "Postscript on Control Societies," in *Negotiations, 1972–1990*, trans. Martin Joughin (New York: Columbia University Press, 1995), pp. 177–82. See also "Control and Becoming," an interview with Antonio Negri in the same volume.

Music and sound punctuate everyday life, their expansive reach boosted by ever smaller and improved electronics, especially the ubiquitous and multipurpose smartphone. A media veteran, I grew up with rotary telephones in the dawn of broadcast television, in a perpetually upgrading, state-of-the-art household of diehard tinkerers, "ham" (amateur) radio operators, scientists, and engineer-inventors. Normal was the wireless hum of otherworldly static and the wafting scent of molten plastic. As a teenager, I played the piano and the organ and roamed the Metropolitan Museum's Asian art galleries. My interest was in communication, how information traveled slowly across the Central Asian desert on the backs of camels, and eons later how ideas coursed over the airwaves. Twentieth-century life was moving at a scarily fast pace. In 1968, news reached me instantly about Martin Luther King's and Robert Kennedy's deaths, as I sat horrified listening to a little transistor radio in my tiny fifth floor walk-up.

While in graduate school at N.Y.U., I would head downtown and sidestep overdosed bodies to hear music and art crossovers carried out by riled-up bands, including The Velvet Underground (who were briefly managed by Andy Warhol), Patti Smith, and the Fugs, a bawdy, subversive group. During the 1960s, activists' counterculture ideals were dramatically blurring the lines between popular and highbrow music and visual art.

My generation—sickened by the Vietnam War—accepted pundits' avowal of an easily networked global village, proffered by the affordable analog audio-visual electronics that were starting to permeate the consumer market, and by the soon-to-arrive cable television. We were impoverished idealists who believed that change was possible, inspired by prophets of the electronic age, especially the media theorist Marshall McLuhan (1911–1980). During the late 1960s, art and technology were engaged in a tentative dialogue, each operating as a separate, specialized area. The blasé art world essentially turned a blind eye on engineering advances, whereas technologists longed to have art curators appreciate their experiments. Computer art became a vague term used to describe any audio-visual work in whose production or display computers played a role.

Despite the fact that New York City was bankrupt and its streets were dangerous, those were heady times, as artists experimented and toppled the boundaries among video, film, music, dance, performance art, and poetry. In the early 1970s, I frequented the seedy old Mercer Hotel in Greenwich Village, recently renamed the Mercer Arts Centre. Down in the dank basement I entered the "kitchen," which had been transformed into a multi-use media theater by the

artist-partners Woody and Steina Vasulka (born 1937 and 1940). Having grown tired of hosting crowded, impromptu screenings of friends' work in their apartment, they founded the space to cultivate media art in what they called an inclusive, un-administrative context.

Today, a fast-moving revolution is happening, boosted by evolving technologies, as up-to-the-minute devices and software are transforming how we create and communicate. Meanwhile as media and performance have become the default modes for many artists, sound has moved up the ranks to be considered an art form in its own right.

Investigating the blurred borders between sound art and new music has been the fodder of persistent theorists, who have been grappling with untangling the roots and the definitions of sound as art. This unorthodox field still manages to vex visually oriented institutions, which have had to contend with such logistics as how to keep sound from bleeding from one space into another, and how to satisfy the audiences that arrive prepared to look rather than listen.

The epitome of a talented generation of younger artists who engage with sound, Aura Satz is much-admired for her more than two-decade-long practice. Her entry into sound began through a series of projects that revolved around ventriloquism and sound technologies. She was working with sculpture, performance and photography, and made several films using archival imagery or new footage of old media. Getting inside a historical composition, prying it open and discovering its mechanics, had an impact on the development of her own camerawork.



Ventriloqua, 2003, reenacted with thereminist Dorit Chrysler, New York, 2012

In 2003, she created the performance *Ventriloqua*, playing the electromagnetic waves of a pregnant body (since restaged in numerous venues, including at Cabinet in Brooklyn in 2012). Referencing ventriloquism in its literal sense of “belly speaking,” the performance turned a pregnant body into a musical instrument, an antenna, and a medium through which a pre-verbal, pre-vocal otherworldly voice is transmitted. It consolidated her interest in sharing voices.

Satz spends months on research and planning of each new project, as she consults with historians, engineers and other specialists who are knowledgeable about a particular technology, looking afresh at what is often regarded as out-of-date. She fashions new immersive environments, often joining sound and moving imagery, developing works that elicit correlation between hearing and vision. She

tends to favor a kind of sound quality that is somewhere between the acoustic voice and electronica, verging on what some might consider noise. Her visuals—footage or photographs—operate on the edge, between the real and the abstract.

Satz's trajectory orbits around two major topics. One involves the art and science of music, sound technology, vibration and acoustics. The other involves social and political factors, especially issues of gender and the rediscovery of important contributions women have made to the technology's development, as inventors of new systems of notation, encryption and sound-making, such as her films about Daphne Oram (1925-2003) and Laurie Spiegel (born 1945).



Dial Tone Drone, 2014, sound piece for telephone featuring the voices of Laurie Spiegel and Pauline Oliveros, installed in the original K2 wooden prototype at the Royal Academy

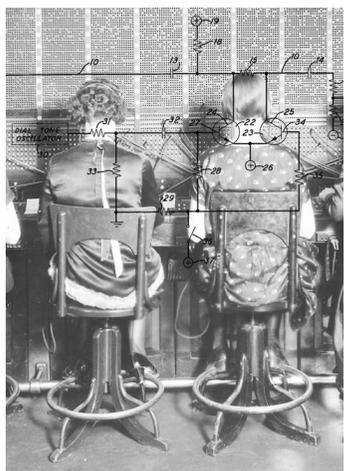
Listening (2018), where she explores hypervigilance and emergency through the sound of the siren as a perceptual trigger of high alert.

After recording the verbal exchange between Oliveros and Spiegel, Satz respectfully orchestrated the conversation against a backdrop of their drone compositions, which move from voice to analogue accordion to electronic music and converge in the center of the fourteen-minute work. The first half features excerpts from *Horse Sings from Cloud* (1975), an accordion score with voice by Oliveros, and the second half features the *Expanding Universe* (1974-76), a computerized composition by Spiegel.

Gallery-goers are invited to pick up the *Dial Tone Drone's* vintage tele-

For her telephone sound composition *Dial Tone Drone* (2014), Satz commissioned a conversation between two old friends, the soft-spoken and respectful sound pioneers Pauline Oliveros 1932-2016) and Laurie Spiege. Communicating via iPhone and Skype and prompted by a series of Satz's questions, the pair congenially discussed aspects of drone sounds, which for years had been an important component of their unconventional electronic work, as they marched quietly to their own drum. Humane, witty, and unassuming, both innovators have been important mentors, teaching and encouraging younger artists through their wisdom and years of experimentation with the electronic signal and tape—both audio and video. Their interest in drone sounds and use of sustained or repeated sounds, notes, or tone-clusters suited Satz's own interest in electronic sound signals, and her attempt to forge a new understanding of auditory attention. A similar concern features in her most recent project *Preemptive*

phone handset, which is connected to an mp3 player contained within a small box installed on the gallery wall. The audience listens in on the conversation enlivened by the compositions, delivered in mono, albeit it is somewhat difficult to discern which speaker is which. Oliveros and Spiegel eloquently get into the nitty-gritty of how the telephone dial tone drone is simply an indication of the potential for communication. Spiegel mentions how, decades ago, callers knew that if they picked up an old-fashioned telephone receiver and did nothing, their inaction would terminate the mild dial tone hum and a clarion blare would take over, a prompt that time and opportunity were over and the phonenumber was about to go dead. She then ponders what it means for two entities or people to be connected in a reciprocal state that can easily be broken, the result of a faulty system or disinterest on the other end.



Sketch for 'Dial Tone Operator,'
2014, sound installation

Oliveros and Spiegel agree that although a drone has only one tone, it isn't static, because the listener's mind will always search for difference. By deciphering subtle deep patterns, the listener will construe some form of interesting counterpoint. *Dial Tone Drone* encourages its perambulatory audience to slow down and pay attention, to do more than simply hear.

In the 1970s, both Oliveros and Spiegel unwittingly provided guidance to me, a neophyte media curator exploring what audio-visual art was and could be. One night, I sat on the floor at the Kitchen, which by then had moved to Broome Street, with a group of other "deep listener-performers" participating in the *Tuning Meditation* (1971). The warmhearted Oliveros guided us with simple instructions: 'Inhale deeply; exhale on the note of your choice; listen to the sounds around you and match your next note to one of them; on your next breath make a note no one else is making; repeat.' She called it 'listening out loud.' The shifting mass-chord meditation-chant went on for quite a while, magically in unison. To my surprise, without any direction from Oliveros, the audience stopped chanting at precisely the same moment. This was sonic awareness, a kind of consensus that the composer described as 'the ability to consciously focus attention upon environmental and musical sound.' This 'continual alertness and an inclination to be always listening' enhanced my understanding of what sound and art could be.

At the time, I was organizing an ongoing series of exhibitions that I hoped would help define what the mediums of video and sound art were. In 1975, I included one of Spiegel's videos in a show that featured work whose imagery was computer-driven, or whose visual and sonic elements had been manipulated by special-effects generators to produce an electronic collage commonly called

synthesized video. Eager to learn, I appreciated a comment Spiegel made; 'I automate whatever can be automated to be freer to focus on those aspects of music that can't be automated. The challenge is to figure out which is which.'¹

In our busy lives, with an overflow of background noise, some urgent and most not, as ordinary mortals we are often unaware which sounds we pay attention to and which we ignore. Where are the external cues, the connecting dial tones, now that smartphones provide a soundtrack to our lives? How does an individual internally recalibrate and adjust when the state of listening is no longer reciprocal? These questions appear to be central to Satz's inquiry.

I am eager to know where "sound art" will go from here, when it seems so full of potential and so much is up for grabs. Ear devices are becoming more sophisticated and directional. Immersed in a private, multi-channel sound bubble, hooked into a social network that connects us to friends and informational podcasts, it is said that we listen more than we read. Aura Satz, together with Pauline Oliveros and Laurie Spiegel, offer a shared experience in the form of a single-channel sound installation. They operate out on the edge, and that's a good place to be.

¹Elizabeth Hinkle-Turner, *Women Composers and Music Technology in the United States: Crossing the Line*. (New York: Routledge, 2006), p. 241.

***'The Institute of Signals and Noise and the Wail That Was Warning':
a Conversation Between Aura Satz and David Toop***

Originally published in November, 2017 on the occasion of a performance by Satz and Toop at London Review of Books event space, London¹

Aura Satz (AS): When we first started to think about this event I mentioned a few ideas relating to a project I'm currently working on centred on sirens and emergency signals. Our conversations took us in all kinds of directions, across the spectrum from the barely audible to the unbearably loud, from small sound signals, alarm clocks, incense clocks, drones and dial tones, to the wailing howls of emergency vehicles and the animal realm. I had a preliminary title, 'The Wail That Was Warning', and somehow we ended up talking about your headed notepaper from the time you set up 'The Institute of Signals and Noises' (which then became the first half of the title). Can you talk a bit more about this?

David Toop (DT): I founded The Institute of Signals and Noises in the mid-1970s. It was a conceptual thing, really, or maybe just headed notepaper and attitude, but what it signified was an opening up to all kinds of sounds that lay outside the purview of conventional music-making and musicology. At the time I was trying to contextualise sound within the broader category of communication, so thinking about humans sounding and listening within an auditory field that encompassed everything: a burglar alarm, the acoustics of a railway station, ultrasonic signals of bats, the creaking of floorboards or knee joints. These days I wouldn't use the word 'communication'. Its implications are too narrow, too directional, but the Institute was a mild art-spoof of scientific thinking and its institutions so it doesn't matter. The real question for me was how could I as an individual with no power, no money and no influence get to exert some leverage on the limited categories that kept music and other aspects of audio culture so separate. One of the things that really fascinated me was inter-species communication. Was it possible to cross this great divide between humans and non-humans? There was some interest in the subject at the time but it tended to be trivialised. Now there's a growing literature devoted to a greater understanding between humans and other entities. I'm thinking of books like Carl Safina's *Beyond Words: What Animals Think and Feel*, Frans De Waal's *Are We Smart Enough to Know How Smart Animals Are?* or even Timothy Morton's *Humankind: Solidarity with Non-Human People*. The Institute of Signals and Noises was really a way to imagine or propose frameworks of sounding and listening within which a greater mutual understanding could develop. Like the Institute itself, they were usually impossible or silly but that was partly the point. There was a built-in feeling of self-deprecation: what can one person possibly do to affect the (in my view mistaken) belief that humans sit on the apex of all phenomena? One answer was to start by positioning yourself well below it and see what happened. Maybe you could explain the second half of the title?

AS: For the last three years I have been thinking about siren signals, trying to forge a new understanding of hypervigilance and emergency through sound as a perceptual trigger of high alert, a sonic prompt that structures attention whilst operating at the threshold between civil obedience and disobedience. Formally I have been working with glissando sounds and stroboscopic light patterns in my films and soundworks for a very long time, and in recent years I have veered into military histories, so I suppose it was kind of inevitable. The auditory qualities that appeal to me the most tend toward ambiguous, elusive sounds of the human on the cusp of the inhuman, generated by electronic signals or instruments such as the musical saw, the theremin or even the human voice itself. I particularly like the idea of shared, overlapping, entangled voices, and these kinds of sounds suggest precisely this slippage. The trope of ventriloquism has been useful in helping articulate a porous, permeable notion of voice, agency, authorship, ownership, who is spoken through, spoken of, with or to. I really relate to what you say about opening up sounding and listening beyond music. There are certain everyday sounds that have become invisible background noise, and yet if we were to pay attention, or think of them compositionally, we might recalibrate our understanding of the world and our place in it.

Recalibration is the guiding principle for my siren project. The siren is effectively a wail that warns and calls out, cries for attention, but remains background noise unless it's coming for you (or you are physically obstructing its path). It has a very strange relationship to time in that it marks out future dangers and commands preemptive listening, but is also a signifier of tragedy, or a trigger for past traumas. We have talked quite a bit about time and this idea of listening forwards or listening back, connecting it to improvisation and being 'in tune' so to speak.

DT: Well, one of the things that makes improvisation interesting to me is that you are constantly working and responding in a present moment that retains a developing memory of what has happened but is always scouting ahead to stay alert to what might happen in the near future. That sense of futurity that you mention is founded in history, the knowledge of what has happened, yet it looks ahead in a very positive way. Even in an emergency siren there's the message that disasters can be contained if we act now, based on what we already know from past experience. There's an ambiguity in it which is typical of sounding phenomena.

Ventriloquism is so fascinating because it pinpoints the ambiguity of sound in space. It asks so many questions about voice in relation to body and consciousness. The illusion of a voice heard from a point seemingly outside the body, often from within another entity, is really spooky. That's why it was so much a part of shamanic auditory practices, because it could create illusions of a room full of spirits, all moving around yet invisible. I developed an interest in shamanism at around the same time that my musical aspirations got serious, at the beginning of the 1970s. Partly it was a consequence of looking for exit routes out of the inevitable

expectations of a music career, that you would make music to entertain people, to make some sort of commercial impact. A lot of questions were coming up: what if I just want to listen or what if I want to make music that has no recognisable precedent. As I got interested in ethnomusicology I learned more about the functionality of music in indigenous or first nation communities, that it wasn't a separate thing for entertainment or art.

Shamanism had a rich auditory culture, using sound as a trance mechanism and representation of the spirit world, also a way of communicating with animals and spirits by using secret languages. That led me into bioacoustics and environmental sounds. Once you start to research animal sounds you become acutely aware that what we understand as reality is very limited. Human hearing works within a fairly narrow bandwidth calibrated more or less to the human voice, so we can't hear a lot of what elephants, bats, dolphins or shrews have to say. In the 1970s I was making simple flutes and I started to use dog whistles, partly to explore the beating and heterodyning frequencies that come about when two or more closely pitched sounds are played simultaneously. It's funny that auditory terms – 'dog whistle', along with 'echo chamber' – have entered the language of contemporary politics to join existing metaphors like 'siren song' and 'alarm bells'. Dog whistle politics refers to a coded message – something racist, for example – that isn't stated explicitly but is perfectly obvious to those in the know. The echo chamber is now commonly used to describe the effect of political argument on social media, through which people only get to hear their own views. Having worked for such a long time in the rather lonely field of audio culture, I wonder and worry about the way these metaphors are used and misused. I felt very alarmed, for example, when journalists started talking about Donald Trump's rambling, free-associative speeches as a kind of 'free jazz'. Having been involved in free improvisation for nearly fifty years I can say with some confidence that it's a practice based on close listening, cooperation and sensitive responses, none of which are evident to me in Trump's behaviour or mode of operating. In fact, he's a prime example of somebody who uses dog whistle politics, the echo chamber, siren calls and alarms, sometimes all of them crushed into one tweet, to foment disorder, panic and destabilisation. This is when specialist knowledge of something like auditory phenomena becomes very important, so we know exactly what we are dealing with.

AS: Yes, I completely agree. There is no doubt we are at a crucial moment in which the concepts of voice and listening (as phenomena, experience and metaphors) are being profoundly transformed by the intertwined technological and ideological shifts of our times. Who can speak and be heard, who speaks on behalf of who, how is voice filtered, disseminated and distorted in the process? How is listening nuanced by echo chambers, what does it mean to retweet or repeat, how does our present attention economy shift our listening experience, how might the algorithmic listening, or eavesdropping, of technological interfaces be altering our democratic structures? All of these questions feel particularly raw and urgent at this point in time, with so much at stake. I am very much taken by the concept of

'listening out', drawing on the writings of Kate Lacey (*Listening Publics: The Politics and Experience of Listening in the Media Age*) and Lisbeth Lipari (*Listening, Thinking, Being: Toward an Ethics of Attunement*). 'Listening out' suggests an ethical obligation to listen out for otherness, for opinions that challenge and clash with our own views, for voices that take us out of our comfort zone rather than keep us trapped in an echo chamber of consonance. More than ever we need the kind of improvised, cooperative close-listening you describe, however hard this might be, especially in relation to political views one might find dissonant, or indeed abhorrent.

In many ways I have been trying to uphold 'the sensitive instrument', for want of a better word, as an intention, a methodology and a subject matter. Often I have worked with close-listening or amplification devices, technologies that allow for a recalibration of the way the eye and the ear construct meaning, and as such propose a new kind of looking/listening or a state of heightened attention. I also like to research the histories of people who have invented or used such devices and what new messages or patterns it allowed them to hear or see. Several of my films have been shot close-up, through a calibrating monitor viewfinder, and frequently the pulse or rhythm of the film is determined through the continual live adjustment of some variation of a tuning knob. My interest in sirens is at the other end of the spectrum of the kind of sensitive, close-listening experience, in that it escalates meditative attention to hypervigilance, where perceived threat can prompt an exaggerated response. I feel it is important to try to unpack this uncritical, impulsive way of being and responding, and maybe through examining these defense mechanisms one can de-escalate the crude, repressive and violent ways so much communication takes place.

In our previous conversations we have talked quite a bit about secret or impenetrable communication systems and the fact the the human ear seeks out the human voice and language – our ears are optimised for speech patterns and communication. But there's another kind of listening that dwells in the humility of not grasping, deciphering or owning, and maybe to connect back to the idea of improvisation, time and memory, it's a kind of listening that vibrates in the moment rather than jumps to conclusions or relies on old preconceived patterns. It opens up rather than narrows down. To quote Pauline Oliveros: 'Quantum listening is listening to more than one reality simultaneously . . . Deep Listening – listening in as many ways as possible to everything that can possibly be heard all of the time. Deep Listening is exploring the relationships among any and all sounds whether natural or technological, intended or unintended, real, remembered or imaginary. Thought is included.'

¹ Satz, Aura, and David Toop. "The Institute of Signals and Noise and the Wail That Was Warning": A Conversation Between Aura Satz and David Toop | Blog." London Review Bookshop. November 2017. Accessed September 22, 2018. <https://www.londonreviewbookshop.co.uk/blog/2017/11/the-institute-of-signals-and-noise-and-the-wail-that-was-warning-a-conversation-between-aura-satz-and-david-toop>.

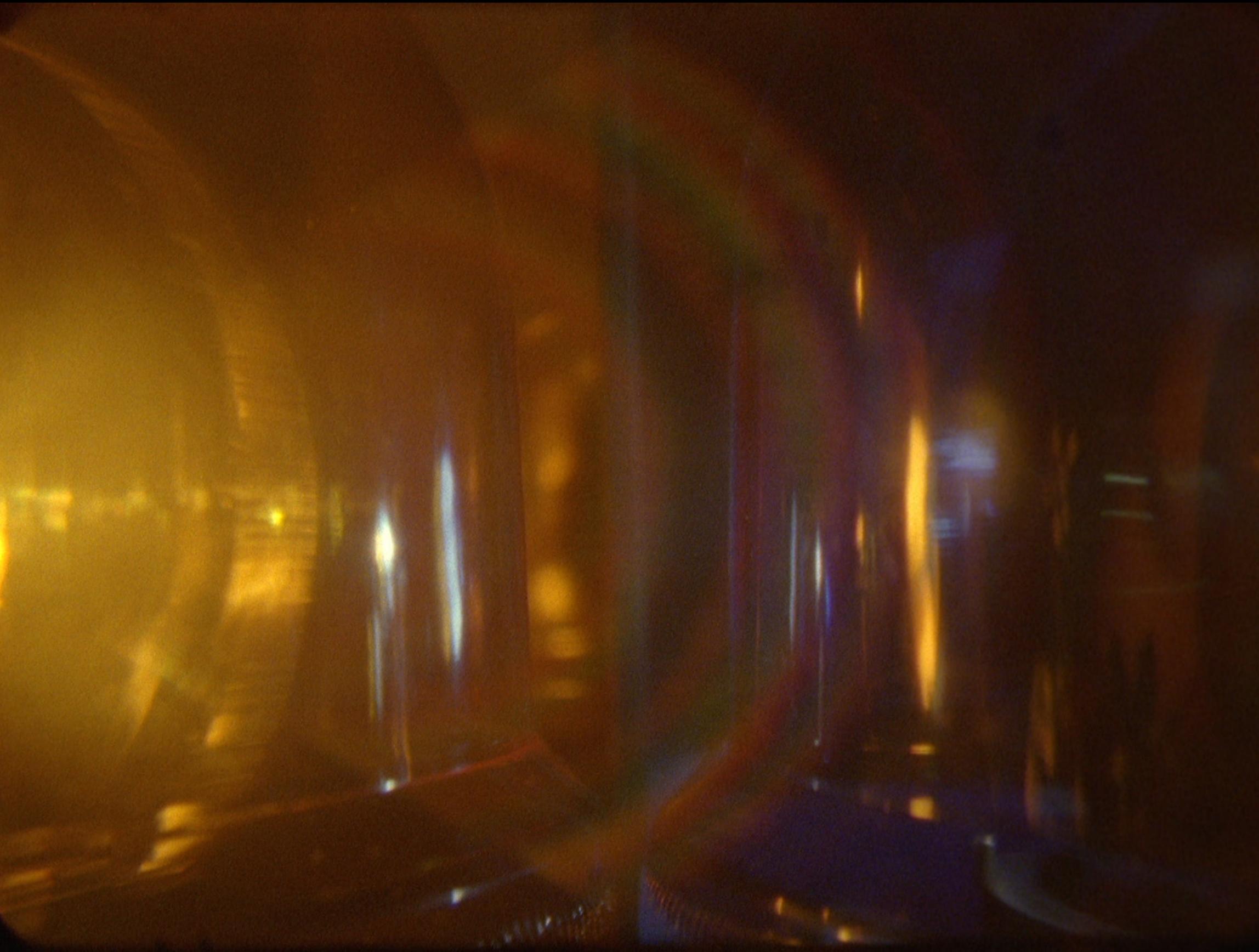
CHRISTOPH COX is the author of *Sonic Flux: Sound, Art, and Metaphysics* (2018) and *Nietzsche: Naturalism and Interpretation* and co-editor of *Audio Culture: Readings in Modern Music* (2004/2017). His writing has appeared in *October*, *Artforum*, *The Wire*, *Journal of Visual Culture*, *Organised Sound*, and he is editor-at-large at *Cabinet* magazine. He has curated exhibitions at the Contemporary Arts Museum Houston, The Kitchen, CONTEXT Art Miami, New Langton Arts, G Fine Art Gallery, and others. Cox is a Professor of philosophy at Hampshire College, MA.

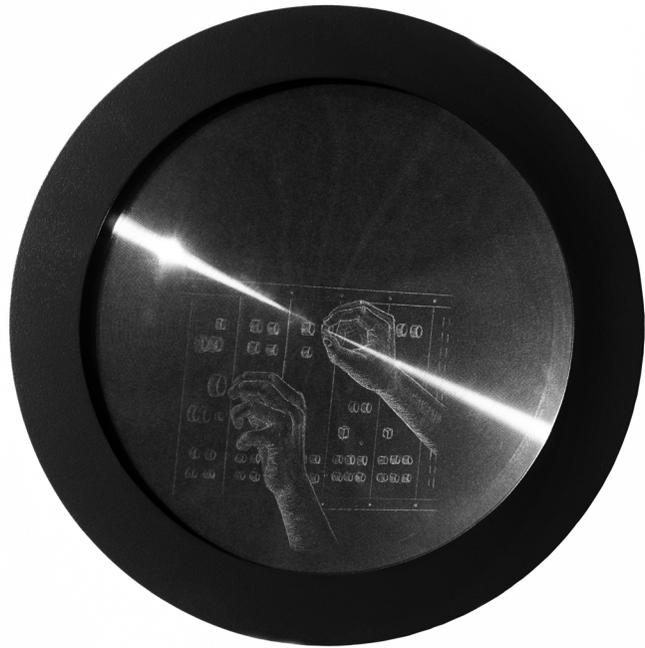
DAVID CROWLEY is a writer, historian and curator. Exhibitions include *Cold War Modern* at the Victoria and Albert Museum, London (2008–9), co-curated with Jane Pavitt; *Sounding the Body Electric: Experimental Art and Music in Eastern Europe* at Muzeum Sztuki, Łódź (2012) and Calvert 22, London (2013), co-curated with Daniel Muzyczuk; *Notes from the Underground. Alternative Art and Music in Eastern Europe 1968-1994*, Muzeum Sztuki, Łódź (2016) and Akademie der Künste, Berlin (2018) co-curated with Daniel Muzyczuk. Crowley is Head of the School of Visual Culture at The National College of Art and Design, Dublin.

BARBARA LONDON is a curator, writer, and sound art advocate best known for founding the video collection at the Museum of Modern Art (MoMA). She joined the staff at MoMa in 1970, and retired from her position as an Associate Curator in the Department of Media and Performance Art in 2013. Exhibitions at MoMA include *Sound Art* (1979); *Video Spaces: Eight Installations* (1995); *Music and Media* (2004); *Looking at Music* (2008); *Soundings: A Contemporary Score* (2013); *Tokyo 1955-1970* (2013). Since her retirement she teaches at Yale School of Art.

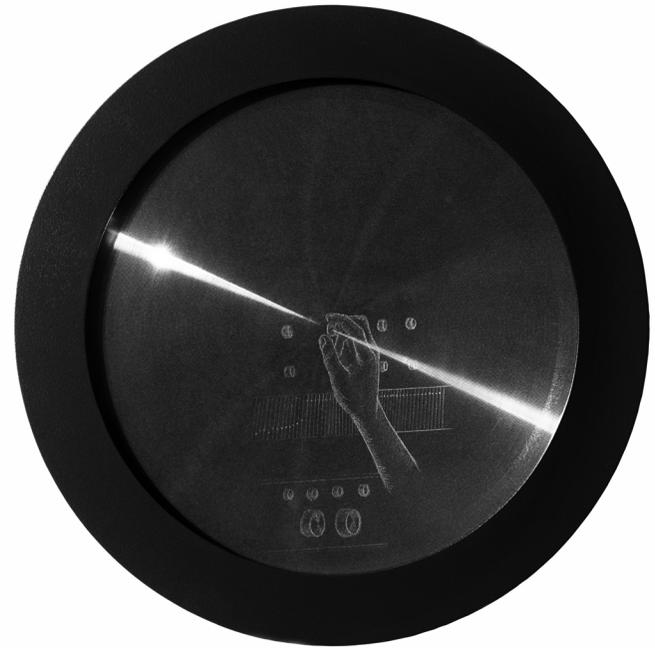
DAVID TOOP has been developing a practice that crosses boundaries of sound, listening, music and materials since 1970. This practice encompasses improvised music performance, writing, electronic sound, field recording, exhibition curating, sound art installations and opera. It includes seven acclaimed books, including *Rap Attack* (1984), *Ocean of Sound* (1995), *Sinister Resonance* (2010) and *Into the Maelstrom* (2016). He curated *Sonic Boom: The Art Of Sound* at the Hayward Gallery, London (2000). He is Professor of Audio Culture and Improvisation at London College of Communication.

LISTEN, RECALIBRATE

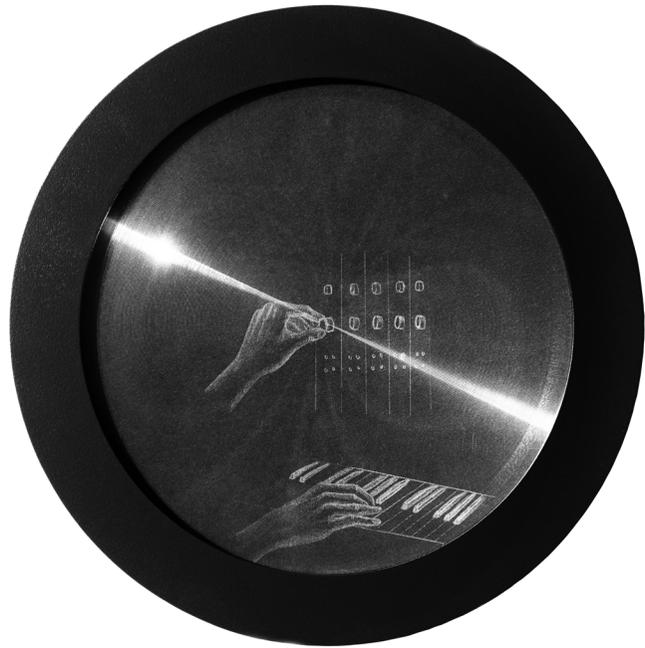




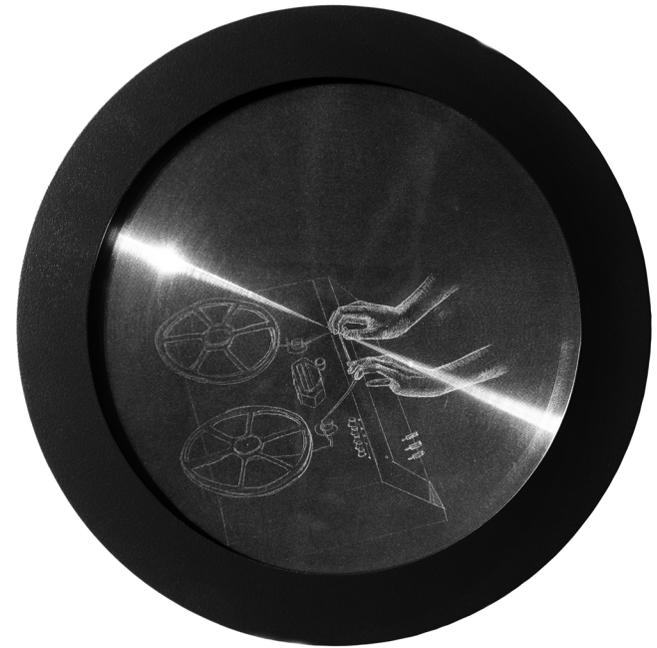
She Recalibrates (Eliane Radigue),
2018



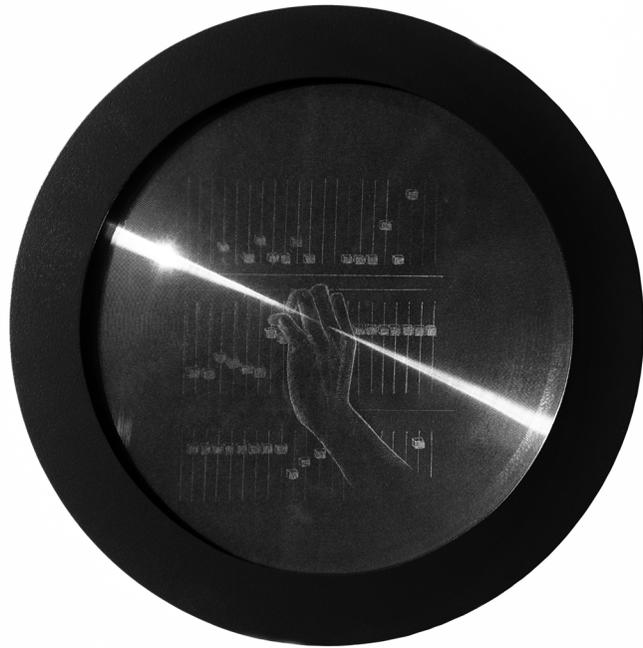
She Recalibrates (Micheline Coulombe Saint-Marcoux),
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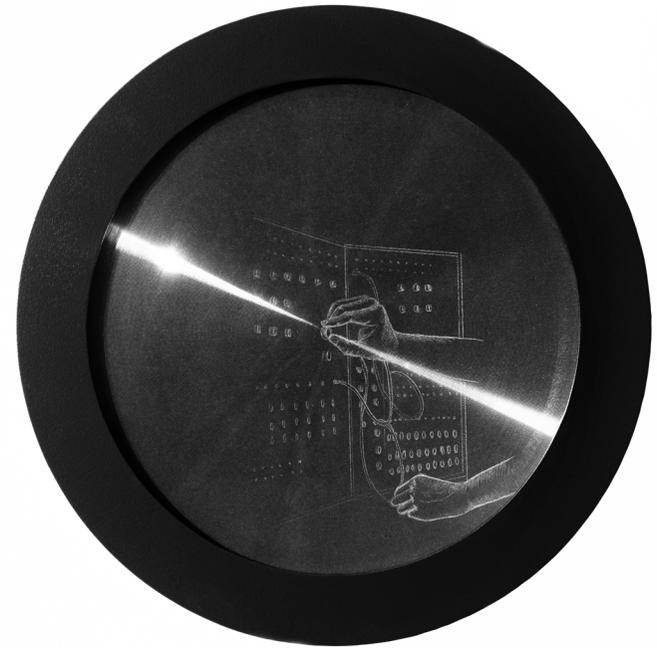
She Recalibrates (Wendy Carlos),
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She Recalibrates (Delia Derbyshire),
2018



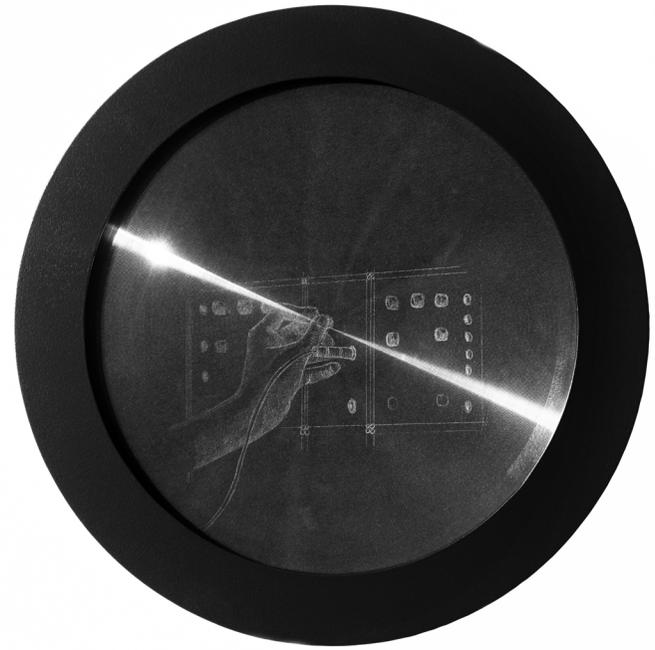
She Recalibrates (Laurie Spiegel),
2018



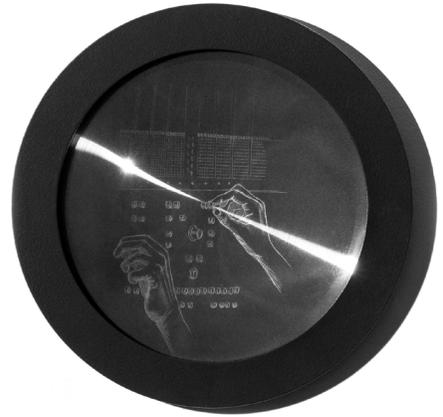
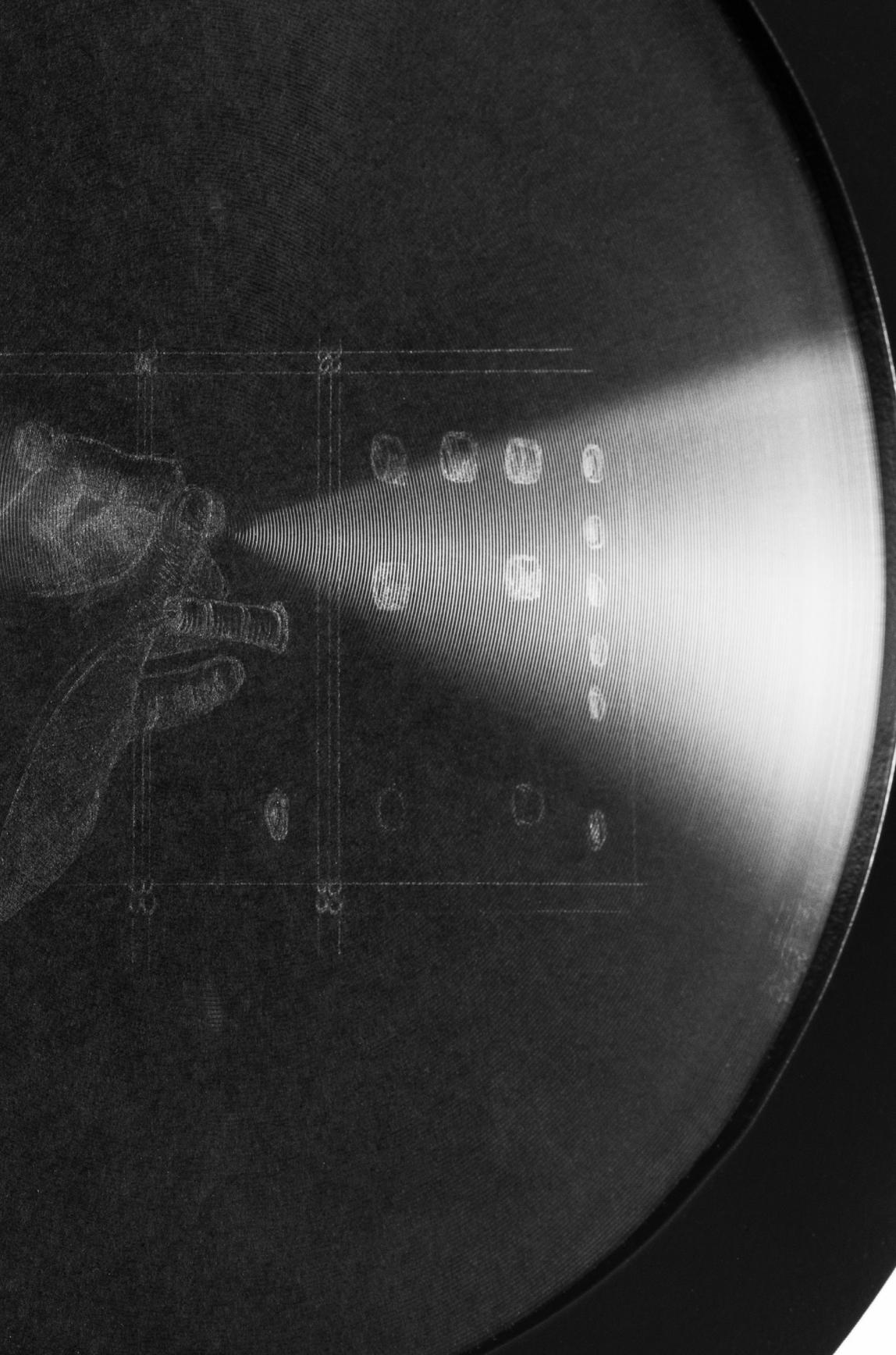
She Recalibrates (Pauline Oliveros),
2018



She Recalibrates (Suzanne Ciani),
2018



She Recalibrates (Tara Rodgers),
2018





Preemptive Listening (part 1: The Fork in the Road), 16mm film still, 2018

Aura Satz

Born in Barcelona, Spain 1974. Based in London.

EDUCATION:

1998-02 Practice / theory PhD in Fine Art Media, the Slade School of Fine Art, London
1992-98 Laurea in D.A.M.S. (Disciplines of Arts, Music and Spectacle), the University of Bologna, Italy.

SELECT SOLO EXHIBITIONS & PERFORMANCES

- 2018 *Listen, Recalibrate*, Fridman Gallery, NY
- 2016 *Her Marks, a Measure*, Dallas Contemporary, Texas
Her Marks, a Measure, Fridman Gallery, NY
Eyelids Leaking Light, Clifford Gallery, Hamilton NY
Between the Bullet and the Hole, solo retrospective screening and talk, Whitechapel Gallery, London
- 2015-16 *The Trembling Line*, John Hansard gallery, Southampton
- 2015 *Eyelids Leaking Light*, George Eastman Museum, Rochester NY
- 2014 *Chromatic Aberration*, The Gallery, Tyneside Cinema, Newcastle
Aura Satz and Lis Rhodes in conversation, screenings as part of Artist's film and video, Tate Britain, London
Blink Comparator: Her Luminous Distance, performance, 60th International Short Film Festival Oberhausen
Blink Comparator: Her Luminous Distance, performance, Amsterdam
- 2013 *Soundfigures*, as part of the 42nd edition of the International Film Festival Rotterdam, BLAAK10 gallery, Rotterdam
Impulsive Synchronisation, Hayward Project Space, London
In and Out of Synch, film performance, 'Only Connect' festival, Kunstnernes Hus, Oslo
Solo looped mini-retrospective, 'Views from the Avant-garde', 51st New York Film Festival, Lincoln Centre, NY
Colour Opponent Process, Paradise Row gallery, London
- 2012 *In and Out of Synch*, film performance, Tate Tanks, Tate Modern, London
In and Out of Synch, film performance, Arnolfini, Bristol
Ventriloqua, film performance, Cabinet, NY
Universal Language: A Lost Manifesto, film performance, Barbican cinema, London
Ventriloqua, film performance as part of the Samsung Art+ award, London
- 2011 *Oramics: Atlantis Anew*, Science Museum, London
Duet performance, film performance, Barbican Gallery, London
- 2010-11 *Sound Seam*, Wellcome Collection, London
- 2010 *I Am Anagram*, performance, Barbican Gallery, London
Turntable Tableau, film performance, Live Weekend, ICA, London
Sound Seam, solo show with Aleks Kolkowski, AV festival, Great North Museum, Newcastle

- 2008 *Glissolalia, Soundtrap III*, solo show and live event, Beaconsfield Gallery, UK Automamusic, Artprojx Space, London
- 2006 *I Am Anagram*, solo show and performances, Whitechapel gallery, London
- 2005 *I Am Anagram*, performance, De La Warr Pavilion, Bexhill-on-sea
Intrasonic, performance presented as part of the First International Prize for Performance, Centrale di Fies in collaboration with the Galleria Civica di Arte Contemporanea di Trento, Trento
- 2004 *Ventriloqua*, film performance, FACT (Film, Art & Creative Technology), Liverpool

SELECT GROUP EXHIBITIONS

- 2019 *95% of the Universe is Missing*, Science Gallery, London
- 2018-19 *Machines of Loving Grace*, Aura Satz, Erica Scourti and Nat Castañeda, three-person exhibition at High Line Art, New York
- 2018 *Mappe Sonore*, Micol Assael, Christina Kubisch and Aura Satz, three-person exhibition at KunstRaum Goethe-Institut, Rome
- 2017-18 *Open Space 2017: Re-envisioning the Future*, InterCommunication Centre (ICC), Tokyo
STARS: Cosmic Art from 1900 up to the present, Lentos Museum, Linz
- 2017 *As Above, So Below: Portals, Visions, Spirits & Mystics*, IMMA, Dublin
- 2016 *The future is already here — it's just not evenly distributed*, 20th Sydney Biennale, Sydney
- 2015 *Drawing Towards Sound*, Stephen Lawrence Gallery, London
- 2014 *They Used to Call it the Moon*, Baltic, Newcastle
Haunted House, Grundy Art Gallery, Blackpool
Mirrorcity; 23 London Artists, Hayward Gallery, London
BOOSTER –Art Sound Machine, Marta Herford, Herford
Pre owned: Looks Good Man, Cell Project Space, London
Transcendence: A Suite, three-person exhibition, Gertrude Contemporary, Melbourne
- 2013-14 *Curiosity: Art and the Pleasures of Knowing*, Hayward Touring in association with Cabinet Magazine, Turner Contemporary, Margate; Norwich Castle Museum and Art Gallery, Norwich; The Exchange Newlyn Art Gallery, Cornwall; de Appel, Amsterdam
- 2012 *Jarman Award* Tour screenings, Whitechapel Gallery, London; FACT, Liverpool; CCA, Glasgow; CIRCA projects, Newcastle; Nottingham Contemporary, Nottingham; Watershed, Bristol
Sight of Sound, Deutsche Bank VIP lounge, Frieze Art Fair, NY
Soundworks, ICA, London
Psychosis part II, "I is someone else", Färgfabriken, Stockholm
Samsung Media Art+ Prize 2012, BFI Southbank, London
Flights of Fancy, Tatton Park Biennale, Cheshire

AWARDS

- 2015 Arts Council England Award for the production of *Between the Bullet and*

the Hole

- Chromatic Aberration*, winner of Best Vanguard Film Competition in Lima Independiente International Film Festival 2015, Lima, Peru
- 2014 Leverhulme artist in residence, the Institute of Sound and Vibration Research and the Department of Music, hosted, the University of Southampton
- 2012 Shortlisted for the Jarman Award, Film London
 Shortlisted for the Samsung New Media Art+ Prize, Suum projects
 Arts Council England Award for the production of *In and Out of Synch*
- 2011 Arts Council England Award for the production of *Universal Language: A Lost Manifesto*
- 2009-10 Artist-in-Residence, the Ear Institute, UCL, London
- 2009 Wellcome Trust Award for *Sound Seam*
- 2007 Film and Video Umbrella development award for *Automamusic*
 Arts Council England Award for *Automamusic*
- 2006 Arts Council England Award for the production of *I Am Anagram*, Whitechapel gallery
- 2006-08 Artsadmin Mid-career Artist Bursary
- 2005 Arts Council England Award for the research and development of *I Am Anagram*
 Special Prize of the First International Prize for Performance, the Centrale di Fies (Drodesera), in collaboration with the Galleria Civica di Arte Contemporanea di Trento, Italy
- 2002-05 Recipient of the Henry Moore Post-Doctoral Sculpture Fellowship, hosted at the Slade School of Fine Art

SELECT FILM FESTIVALS

International Film Festival Rotterdam (Rotterdam); New York Film Festival (NY); Crossroads SFMOMA (San Francisco); Flaherty NYC, Anthology Film Archives (NY); London Film Festival (London); Festival du Nouveau Cinema (Montreal); Curtas Vila do Conde International Film Festival (Lisbon); New Horizons International Film Festival (Wroclaw); Jihlava International Documentary Film Festival (Jihlava); Lima Independiente International Film Festival (Lima); FILMADRID International Film Festival (Madrid); Transmediale (Berlin); European Media Art Festival (Osnabrueck)

COLLECTIONS

Deutsche Bank NY collection, Arts Council Collection, George Eastman Museum Collection, Smithsonian National Portrait Gallery, Zabłudowicz collection, Science Museum, Lodeveans Collection and other private collections

Aura Satz
LISTEN, RECALIBRATE

November 7 - December 14, 2018
FRIDMAN GALLERY
169 Bowery
New York, NY 10002

Fridman Gallery
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Gallery Manager: Tennae Maki

Catalog
Design: Tennae Maki
Essays: Christoph Cox, David Crowley, Barbara London, Aura Satz with David Toop
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COVER IMAGE: *Preemptive Listening*
(part 1: *The Fork in the Road*), 16mm