Documentation for Teachers
Around the Exhibition

Esma' / Listen

27.04.2016 - 21.08.2016

BEIRUT ART CENTER
مركز بيروت للفن

This document is aimed at teachers: it is not meant for students' use. It does not replace the visit, nor is it a record that documents the exhibition. It is a research tool to be used by the teachers to address the exhibition in relation to different knowledge backgrounds so that they can refer to it in the course of their practice. The Workbook exists to facilitate the teachers' use of the visit for work-in-class purposes and to inspire them to invent whatever their teaching practices require.

To book a group visit for your class, please write to:
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Cover Image: Jessica Warboys, *Hinge Bow* (2013)

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I. Curators' Statement

With *Esma'*, Beirut Art Center invites artists and composers to share the exhibition space. Whether silent or audible, their works develop contemporary forms of listening, a specific sensory condition that engages with the awareness of distance and proximity, of interiority and exteriority. Since the ear has no eyelid, our acoustic sensitivity exposes us to sound before anything else. Listening is constructed on this organic porosity: it is an act involving various degrees of consciousness and intentionality. It filters, samples, reorganize the sonic material that we receive. Listening may be immersive or analytical, rely on our attention and discernment or on technical tools. By means of recording and amplification techniques it is likely to detail, reproduce and translate the sounds.

In light of the ubiquity and increasing efficiency of audiovisual media, the act of listening has become the object of singular artistic research, both diverse and innovative. It is akin to a project, an experiment and a critical practice. The artists and composers convened here use sensory modalities in widely different manners, in order to describe or produce a particular state of reception or interpretation of sound, of the beliefs it entails, the information it conveys, and the individual and collective territories thus determined. The works in this exhibition are audiovisual gestures inspired by a practical or imaginary experience of sound, they invent a sensorium in both formal and conceptual terms. They go beyond the notions of silence and enlargement of the acoustic spectrum, which were opened up by the work of John Cage, whether to experiment with the potentials and limits of perception or to reexamine the material and instrumental culture of recording and broadcasting techniques.

Stretching the domain of the audible

The expansion of the acoustic spectrum has been the subject of intense research for the musical avant-garde since the turn of the 60's. It was during that time that **Alvin Lucier** produced music by amplifying his brain's alpha waves (*Music For Solo Performer*, 1966) and began to pick up the vibrations of the ionosphere surrounding the Earth's magnetic field, otherwise undetectable to the naked ear (*Sferics*, 1981). Around the same time, **Pauline Oliveros** developed the concept of "Deep Listening": the process of composition is realized by incorporating specific resonances, abstracted from the noise of the world. Attentive to aural thresholds and modalities, she started organizing in the 80's collective listening sessions in underground, remote locations. *Esma'* adopts this extension of the limits of musical perception as one of its guidelines, particularly with **Alvin Lucier**'s exceptional piece *Music On A Long Thin Wire* (1977). A vibrating string stretched over more than twenty meters is set into vibration by sine waves and amplified through an electromagnetic field. These waves produce a very pure sound, where the most tenuous vibrational disturbances become full-fledged acoustic events.

In *To Valerie Solanas And Marilyn Monroe In Recognition Of Their Desperation* (2013), **Pauline Boudry and Renate Lorenz** refer to Pauline Oliveros' eponymous piece. The latter is a tribute to two women who responded to an unbearable situation with a desperate gesture. Boudry and Lorenz are interested in the emotional and political charge of listening contained in Oliveros' piece. Composition is conceived as a space for possible integration in a community, and endows each performer

with an aural "responsibility". Boudry and Lorenz filmed the interpretation of this piece as a succession of musical exchanges, based on the reciprocity of listening between various instrumentalists; the cast of performers is also a strong political statement on gender identity.

Composers and performers Sharif Sehnaoui and Cynthia Zaven address the space-time continuum of sound phenomena by stretching the conditions of the listening experience. In *Sound Capsules* (2016), **Sharif Sehnaoui** proceeds to build a polyphonic structure that will evolve over time in the exhibition, within a specific acoustic space designed for short concerts that will be given at precise intervals. A recording from each of these concerts will be subsequently stretched over the duration of the exhibition, constructing a progressive multilayered composition. The work ends up exposing time itself by means of a process that travels from a primary structure through a saturated sound field. **Cynthia Zaven** will present her first piece for voice, *For Voice and Forest* (2016). The video will consist of a performance that explores the spatial dimensions of sonic phenomena in a landscape by reflecting on the perception of distance, scale, and focus: from emergence to near-disappearance.

Listening to objects, materializing the voice

Sound culture has been profoundly shaped by the technologies of recording and broadcasting and by the way these technologies translate and transpose data, through processes that are accelerated by cycles of obsolescence and renewal. The materiality of sound capture is a component of listening. Highliting the role played by the technological mediation of sound, the exhibition begins with an installation and a video by **Christian Marclay**. Since his pioneering experiments with magnetic tape loops and "turntablism" (concerts featuring music played from LPs) within New York's experimental scene of the 80's, Marclay has probed intermediate spaces between the senses, exploring their convertibility by way of a practice that reinvents displacement, reuse and editing. A famous part of his work focuses on the material life of recording media, such as vinyl records and magnetic tapes, residues of a sonic memory produced through physical impression. He recycles these objects in environments and sculptures that highlight the relationship between the recording and migration of sound through portable objects. The vinyl records covering the ground at the entrance of *Esma´* (*4,000,000 Minutes*, 2000/2016) offer visitors an unstable ground and situation reversal. They are invited to trample these remains, a volume of stored past time; only their memory and imagination will enable them to temporarily "play" these records, producing a virtual silent cacophony and an effective destruction. In *Mixed Reviews (American Sign Language)* (1999-2001), Marclay filmed the interpretation of a collage of texts of music criticism by a deaf and dumb actor, thus commenting on the translatability of the acoustic experience, such as the rivalry between the visible and the audible.

Artist and writer **Moyra Davey** annotates her photographs with names and addresses so that the images are seen together with traces of their life. Bits of tape, scratches and stamps, denote these images' journey from her studio to the special places where she mails them. They generally represent receptacles of memory connected with everyday life: books, records, places of commemoration ... in *House (Montreal)* (2016), we have nine photographs taken in a shop selling second-hand House Music records. Their surface showing marks of their journey point to their last movement – whereas previous movements could consist of audio recordings, of photography as a visual recording, of the circulation of goods... These movements are displacements that also evoke the evolution of listening with regard to spaces

and times, and the different interpretations that occur according to the contexts in which the act of listening takes place.

Seeing hearing

Some contemporary visual artists engage in a subtle dialogue with the aural culture of modernity and its aspiration to both open and sharpen our acoustic abilities: from the belief of synesthesia, or intimate interconnection and translatability between the senses, to John Cage's idea of "all sound" that negated any frontier or hierarchy between musical language and ordinary or unintentional sounds, this acoustic field that we call "noise". **Pierre Huyghe**'s piece *Score of Silence* (1997) engages musical notation in a visual commentary on Cage's legacy. Huyghe has made a musical score out of a precise and dated "silence", that of the first *4'33"* recording of *Silence* in 1961 (while the piece was created in 1952), with all the unintentional noises that can actually be heard in it. The artist reinterprets a fundamental gesture in the history of art and avant-garde music, to highlight the stakes of a performance which proposes a radical filter for the amplification of listening. **Melissa Dubbin and Aaron Davidson**, for their part, combine a musical and conceptual practice in their approach, by investing primarily visual shapes. *Volumes for Sound* (2010) is the result of a score of shapes: those of the Hi-Fi furniture that usually encases the technological tools used for home listening. Serving simultaneously as stage, listening device and sculpture, the resulting construction of geometric forms hosts inverted speakers. The sound produced during performances of amplified music is muffled by these filtering entities. The piece requires the listeners to lend an attentive ear and over-activate their availability to the music.

Artist **Olaf Nicolai** also puts into discussion the search for equivalence between hearing and seing which has marked modernity. He questions more generally the aspirations of modernity to create a "universal language", which guided the search for total translatability between artistic disciplines in the early decades of the twentieth century. Nicolai's installation *Probestücke* (2013) refers to a monument of the genre: the architecture of the Convent of La Tourette, near Lyon, France, where Le Corbusier appealed to the musical ear of Iannis Xenakis to design large stained glass windows, in accordance with his own reliance on the golden section in designing the proportions of the building. In return, Nicolai relied on the same principle to compose a graphic space, the equivalent of a visual score that is an invitation to explore the musical imagination. Here, professional singers give separate readings of these abstract geometric shapes, resulting in strangely similar interpretations which Nicolai uses as possible paths for non-professional composition.

The work of **Jessica Warboys** confronts more directly the surrounding space of sound vibrations. The practice of this British artist encompasses several media - sculpture, painting, film and sound - and is generally based on the processes of transformation of materials, stretched to the point of instability. She emphasizes the traces of her own gestures and the manifestations of matter, and her work highlights the process of formation rather than the finished form. The spiral configuration of *Hinge Bow* (2013) creates the image of an acoustic cornet with folded or sliced sheets of paper. Composed in collaboration with musician and sound artist **Morten Norbye Halvorsen**, the vibratory soundtrack, structured from sine waves, seems to wind and unwind the shape wrapped around the sculpture, establishing a fragile dialogue between the visible and the ambient.

Soundtracks of the public space

Finally, the works of **Francis Alÿs**, **Lawrence Abu Hamdan** and **Vartan Avakian** are

concerned with the politics of listening in the public space. **Francis Alÿs**' practice initiates links and circulates meaning quite literally, by means of his wanderings in the public space since 1994. Alÿs strives to destabilize the shape and power of institutions with performative, intentionally minor gestures. His practice is inseparable from that of drawing and painting, and reinstates the representation between the notion of project and its capacities for incarnation. The gesture performed in *Railings, London* (2004) seems insignificant: the artist plays with the space of a city, London, striking various gates he encounters while walking. In this manner he is taking an element from the vocabulary of architecture, which functions as a threshold and boundary between two spaces, and places it in another field of resonance. The artist unfolds the visual and territorial vibration emitted by the gate to the beat of his journey.

More recently, artist **Lawrence Abu Hamdan** built his practice on handmade electronic music and performance. For several years he has developed audiovisual installations and essays, which comment on the significant presence of sound as an indicator and public marker within societies of information and discrimination and their specific technologies. His research is informed by the investment of language, of national identity, human rights and justice administration. The techniques of his audio-aesthetic practice have laid the ground for his conduction of forensic audio analysis for several legal investigations, and he has become known as a "private ear". *Conversations With An Unemployed* (2013) and *The All Hearing* (2013) address the culture of amplification and noise pollution in the public space in Cairo, notably by looking at the material layers of sound recorded on magnetic tapes and magnified as pieces of evidence, while his most recent video work, *Rubber Coated Steel* (2016) depicts a ballistics trial based on sound analysis.

The exhibition also includes a piece that connects the external space with the inside. **Vartan Avakian**'s project invests the area of the river and the neighborhood of Beirut Art Center. In *Composition with a Recurring Sound* he tries to capture a sound eradicated by urban planning: that of the Beirut river, now hidden behind high walls and reduced in recent years to a trickle of water and sewage, to the point where people living nearby are for the most part unaware of its existence. The almost inaudible character of this sonic movement renders Avakian's intervention a gesture of resistance rather than documentation. The piece will be physically present in the show in a very discreet way. Visitors will be at some point invited to walk to some spots in the public space where they can experience the impermeability of the barriers separating the city from the river, and can actually witness the limits of the city, as drawn by the river. Visitors are also invited to walk to some spots in the public space where they can experience the impermeability of the barriers separating the city from the river, and can actually witness the limits of the city, as drawn by the river. They will effectively have to strain their ears to distinguish the near-silence of the water amid Beirut's dense soundtrack.

Marcella Lista and Marie Muracciole

II. The Experimental music scene of the 20th century

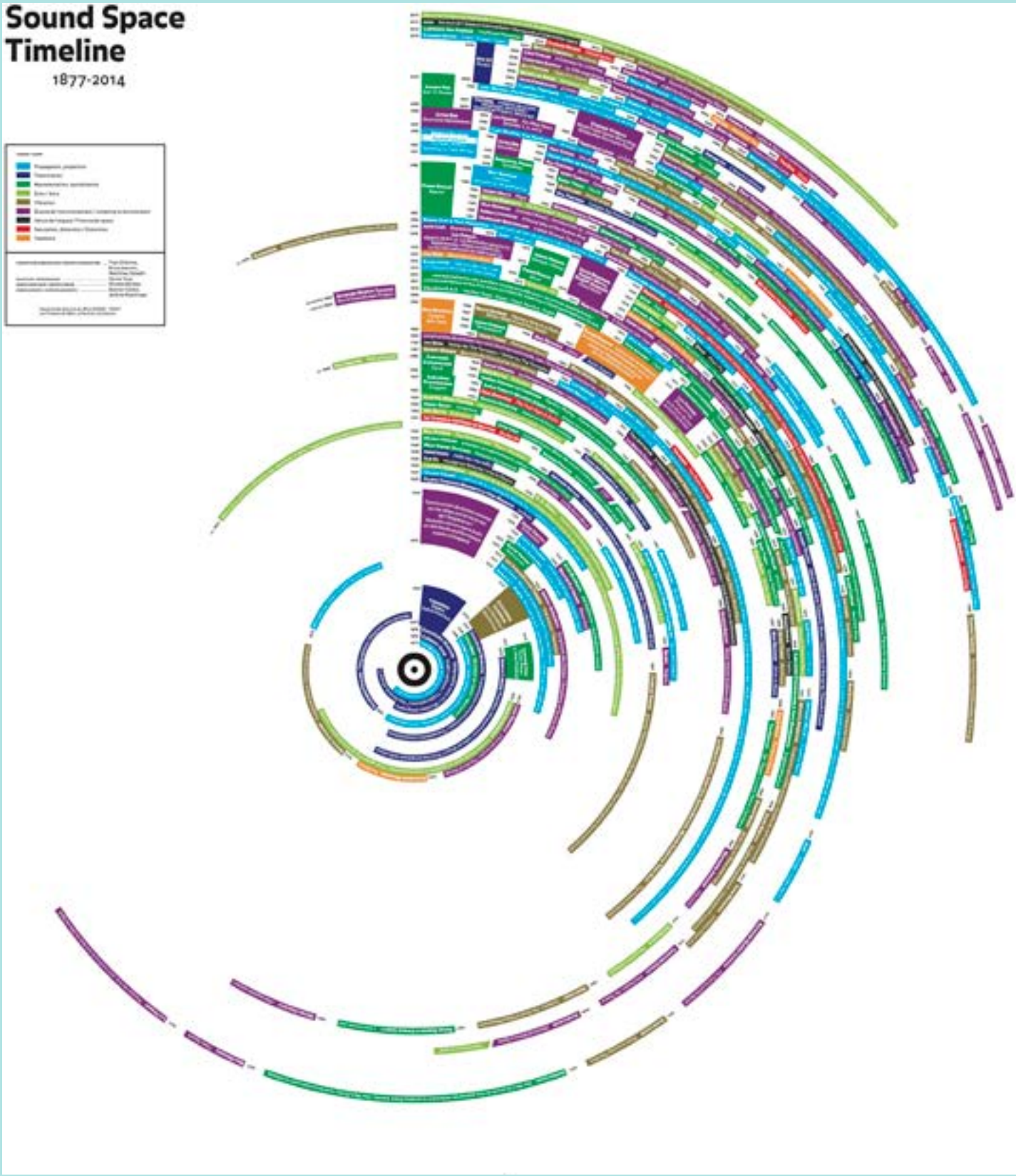
In the late 1940s, John Cage's practice enlarged the musical spectrum to include what was until then excluded from the musical body: noise and silence. His fascination with both silence and the sounds produced by different means as well as his experiments with the piano itself have lead to milestone works like *Sonatas and Interludes* (1946-1948) for Prepared Pianos, *Music of Changes* (1951) and *4'33* (1952). This new understanding of what music is – or could possibly be – paved the way to extensive research and different practices that would shape the experimental music scene of the 20th century.

Since the turn of the 60s, the musical avant-garde researched the audible domain's expansion in both scientific and artistic ways: they produced music from sources and tools until then unexplored. For instance, Alvin Lucier used amplified alpha brainwaves in live performances (*Music for Solo Performer*, 1966) and evoked room acoustics for musical purposes (*I am Sitting in a Room*, 1970; *Reflections of Sounds from the Wall*, 1981). The physical characteristics of sound became a material to work with in the areas of music composition and performance.

The technologies of recording and broadcasting were at the same time deeply affecting the sound culture: Pierre Boulez founded the IRCAM (Institut de Recherche et Coordination Acoustique/Musique), which opened in Paris in 1977, providing artists and musicians with studios to experiment freely with technology and new musical tools. Around the same time, The New York experimental scene of the 80s was Christian Marclay's starting point to his explorations of the relationship between the visual and the audible, the convertibility between the senses, as well as the materiality of the recording media and the migration of sound through them. His early works include *Recycled Records* (1980-86): hybrid objects made of fragmented and reassembled vinyl records that could be played.

The 1980s have also been the time at which Pauline Oliveros developed the concept of "Deep Listening", a state of attention to sound that would allow one to listen in every possible way to everything possible: sounds of daily life, nature, music, or one's own thoughts. A key figure in contemporary music, her practice incorporates environmental sounds into musical performance.

The contemporary music scene still draws on this enlargement of the spectrum of the realm, the relationship between the visible and the audible on one hand, and between sound and space on the other, presenting the various audiences with pieces that question the very way they listen and perceive sound.



Sound Space Timeline 1877-2014, Tacet # 3, "Form, Sound, Space" (2014)

John Cage
(1912-1992)

John Cage was an American composer, music theorist, writer, artist, an experimenter and innovator. Throughout his 60 years career, Cage has ceaselessly questioned and pushed the boundaries of what music is. At the core of his theories is the idea that music is not a closed box of tones, but a myriad of possibilities and doors; anything can be music, anything can be used to create music.

Those experimentations lead to the creation of works such as *4'33"* (1952), in which the performer(s) is instructed not the play his/her instrument during the entirety of the piece; *Sonatas and Interludes* (1946-48) for prepared piano; and *Music of Changes* (1951), Cage's most challenging work for piano, which consists of musical phrases placed according to chance with the help of the I Ching, the Chinese division system.

His work and experimentations have influenced many artists, including La Monte Young, Nam June Paik and other members of the Fluxus network, founded in 1960 by Lithuanian/American artist George Maciunas and rooted in experimental music, as well as modernists like Morton Feldman and minimalists like Terry Riley.

The Prepared Piano
John Cage worked on making the piano sound percussive and metallic using screws, bolts, and bits of rubber. His prepared pianos have contributed to the widening of the spectrum of sounds produced by this instrument and generating new possibilities:

"Having decided to change the sound of the piano in order to make a music suitable for Syvilla Fort's Bacchanale, I went to the kitchen, got a pie plate, brought it back into the living room, and placed it on the piano strings. I played a few keys. The piano sounds had been changed, but the pie plate bounced around due to the vibrations, and, after a while, some of the sounds that had been changed no longer were. I tried something smaller, nails between the strings. They slipped down between and lengthwise along the strings. It dawned on me that screw or bolts would stay in position. They did. And I was delighted to notice that by means of a single preparation two different sounds could be produced. One was resonant, the other was quiet and muted. The quiet one was heard whenever the soft pedal was used."

- John Cage, How the Piano came to be Prepared

Watch :
-Stephen Drury's (New England Conservatory's Piano faculty) *How to Prepare a Piano* **here.**
-John Cage playing amplified cacti and plant material with a feather (in Nam June Paik's TV Special *Good Morning Mr.Orwell,* 1984) **here**.
-John Cage performing *Water Walk* in January, 1960 on the popular TV show I've Got A Secret **here**.

Autobiographical Statement
- John Cage

I once asked Aragon, the historian, how history was written. He said, "You have to invent it." When I wish as now to tell of critical incidents, persons, and events that have influenced my life and work, the true answer is all of the incidents were critical, all of the people influenced me, everything that happened and that is still happening influences me.

My father was an inventor. He was able to find solutions for problems of various kinds, in the fields of electrical engineering, medicine, submarine travel, seeing through fog, and travel in space without the use of fuel. He told me that if someone says "can't" that shows you what to do. He also told me that my mother was always right even when she was wrong.

My mother had a sense of society. She was the founder of the Lincoln Study Club, first in Detroit, then in Los Angeles. She became the Women's Club editor for the Los Angeles Times. She was never happy. When after Dad's death I said, "Why don't you visit the family in Los Angeles? You'll have a good time," she replied, "Now, John, you know perfectly well I've never enjoyed having a good time." When we would go for a Sunday drive, she'd always regret that we hadn't brought so-and-so with us. Sometimes she would leave the house and say she was never coming back. Dad was patient, and always calmed my alarm by saying, "Don't worry, she'll be back in a little while."

Neither of my parents went to college. When I did, I dropped out after two years. Thinking I was going
to be a writer, I told Mother and Dad I should travel to Europe and have experiences rather than continue in school. I was shocked at college to see one hundred of my classmates in the library all reading copies of the same book. Instead of doing as they did, I went into the stacks and read the first book written by an author whose name began with Z. I received the highest grade in the class. That convinced me that the institution was not being run correctly. I left.

[...]

Read the full statement **here**.

Experimental Music
- John Cage

The following statement was given as an address to the convention of the Music Teachers National Association in Chicago in the winter ot 1957. It was printed in the brochure accompanying George Avakian's recording of my twenty-five-year retrospective concert at Town Hall, New York, in 1958.

Formerly, whenever anyone said the music I presented was experimental, I objected. It seemed to me that composers knew what they were doing, and that the experiments that had been made had taken place prior to the finished works, just as sketches are made before paintings and rehearsals precede performances. But, giving the matter further thought, I realized that there is ordinarily an essential difference between making a piece of music and hearing one. A composer knows his work as a woodsman knows a path he has traced and retraced, while a listener is confronted by the same work as one is in the woods by a plant he has never seen before.

Now, on the other hand, times have changed; music has changed; and I no longer object to the word "experimenial." I use it in fact to describe all the music that especially interests me and to which I am devoted, whether someone else wrote it or I myself did. What has happened is that I have become a listener and the music has become something to hear. Many people, of course, have given up saying "experimental" about this new music. Instead, they either move to a halfway point and say "controversial" or depart to a greater distance and question whether this "music" is music at all.

For in this new music nothing takes place but sounds: those that are notated and those that are not. Those that are not notated appear in the written music as silences, opening the doors of the music to the sounds that happen to be in the environment. This openness exists in the fields of modem sculpture and architecture. The glass houses of Mies van der Rohe reflect their environment, presenting to the eye images of clouds, trees, or grass, according to the situation. And while looking at the constructions in wire of the sculptor Richard Lippold, it is inevitable that one will see other things, and people too, if they happen to be there at the same time, through the network of wires. There is no such thing as an empty space or an empty time. There is always something to see, something to hear. In fact, try as we may to make a silence, we cannot. For certain engineering purposes, it is desirable to have as silent a situation as possible. Such a room is called an anechoic chamber, its six walls made of special material, a room without echoes. I entered one at Harvard University several years ago and heard two sounds, one high and one low. When I described them to the engineer in charge, he informed me that the high one was my nervous system in operation, the low one my blood in circulation. Until I die there will be sounds. And they will continue following my death. One need not fear about the future of music.

But this fearlessness only follows if, at the parting of the ways, where it is realized that sounds occur whether intended or not, one turns in the direction of those he does not

intend. This turning is psychological and seems at first to be a giving up of everything that belongs to humanity—for a musician, the giving up of music. This psychological turning leads to the world of nature, where, gradually or suddenly, one sees that humanity and nature, not separate, are in this world together that nothing was lost when everything was given away. In fact, everything is gained. In musical terms, any sounds may occur in any combination and in any continuity.

And it is a striking coincidence that just now the technical means to produce such a free-ranging music are available. When the Allies entered Germany towards the end of World War II, it was discovered that improvements had been made in recording sounds magnetically such that tape had become suitable for the highfidelity recording of music. First in France with the work of Pierre Schaeffer, later here, in Germany, in Italy, in Japan, and perhaps, without my knowing it, in other places, magnetic tape was used not simply to record performances of music but to make a new music that was possible only because of it. Given a minimum of two tape recorders and a disk recorder, the following processes are possible: 1) a single recording of any sound may be made; 2) a rerecording may be made, in the course of which, by means of filters and circuits, any or all of the physical characteristics of a given recorded sound may be altered; 3) electronic mixing (combining on a third machine sounds issuing from two others) permits the presentation of any number of sounds in combination; 4) ordinary splicing permits the juxtaposition of any sounds, and when it includes unconventional cuts, it, like rerecording, brings about alterations of any, or all of the original physical characteristics. The situation made available by these means is essentially a total sound-space, the limits of which are ear-determined only, the position of a particular sound in this space being the result of five determinants: frequency or pitch, amplitude or loudness, overtone structure or timbre, duration, and morphology (how the sound begins, goes on, and dies away). By the alteration of any one of these determinants, the position of the sound in sound-space changes. Any sound at any point in this total sound-space can move to become a sound at any other point. But advantage can be taken of these possibilities only if one is willing to change one's musical habits radically. That is, one may take advantage of the appearance of images without visible transition in distant places, which is a way of saying "television," if one is willing to stay at home instead of going to a theatre. Or one may fly if one is willing to give up walking.

Musical habits include scales, modes, theories of counterpoint and harmony, and the study of the timbres, singly and in combination of a limited number of soundproducing mechanisms. In mathematical terms these all concern discrete steps. They resemble walking—in the case of pitches, on stepping-stones twelve in number. This cautious stepping is not characteristic of the possibilities of magnetic tape, which is revealing to us that musical action or existence can occur at any point or along any line or curve or what have you in total sound-space; that we are, in fact, technically equipped to transform our contemporary awareness of natures manner of operation into art.

Again there is a parting of the ways. One has a choice. If he does not wish to give up his attempts to control sound, he may complicate his musical technique towards an approximation of the new possibilities and awareness. (I use the word "approximation" because a measuring mind can never finally measure nature.) Or, as before, one may give up the desire to control sound, clear his mind of music, and set about discovering means to let sounds be themselves rather than vehicles for man-made theories or expressions of human sentiments.

This project will seem fearsome to many, but on examination it gives no cause for alarm. Hearing sounds which are just sounds immediately sets

the theorizing mind to theorizing, and the emotions of hurpan beings are continually aroused by encounters with nature. Does not a mountain unintentionally evoke in us a sense of wonder? Otters along a stream a sense of mirth? Night in the woods a sense of fear? Do not rain falling and mists rising up suggest the love binding heaven and earth? Is not decaying flesh loathsome? Does not the death of someone we love bring sorrow? And is there a greater hero than the least plant that grows? What is more angry than the flash of lightning and the sound of thunder? These responses to nature are mine and will not necessarily correspond with another's. Emotion takes place in the person who has it. And sounds, when allowed to be themselves, do not require that those who hear them do so unfeelingly. The opposite is what is meant by response ability.

New music: new listening. Not an attempt to understand something that is being said, for, if something were being said, the sounds would be given the shapes of words. Just an attention to the activity of sounds.

Those involved with the composition of experimental music find ways and means to remove themselves from the activities of the sounds they make. Some employ chance operations, derived from sources as ancient as the Chinese Book of Changes, or as modern as the tables of random numbers used also by physicists in research. Or, analogous to the Rorschach tests of psychology, the interpretation of imperfections in the paper upon which one is writing may provide a music free from one's memory and imagination. Geometrical means employing spatial superimpositions at variance with the ultimate performance in time may be used. The total field of possibilities may be roughly divided and the actual sounds within these divisions may be indicated as to number but left to the performer or to the splicer to choose. In this latter case, the composer resembles the maker of a camera who allows someone else to take the picture.

Whether one uses tape or writes for conventional instruments, the present musical situation has changed from what it was before tape came into being. This also need not arouse alarm, for the coming into being of something new does not by that fact deprive what was of its proper place. Each thing has its own place, never takes the place of something else; and the more things there are, as is said, the merrier.

But several effects of tape on experimental music may be mentioned. Since so many inches of tape equal so many seconds of time, it has become more and more usual that notation is in space rather than in symbols of quarter, half, and sixteenth notes and so on. Thus where on a page a note appears will correspond to when in a time it is to occur. A stop watch is used to facilitate a performance; and a rhythm results which is a far cry from horse's hoofs and other regular beats.

Also it has been impossible with the playing of several separate tapes at once to achieve perfect synchronization. This fact has led some towards the manufacture of multiple-tracked tapes and machines with a corresponding number of heads; while others—those who have accepted the sounds they do not intend—now realize that the score, the requiring that many parts be played in a particular togetherness, is not an accurate representation of how things are. These now compose parts but not scores, and the parts may be combined in any unthought ways. This means that each performance of such a piece of music is unique, as interesting to its composer as to others listening. It is easy to see again the parallel with nature, for even with leaves of the same tree, no two are exactly alike. The parallel in art is the sculpture with moving parts, the mobile.

It goes without saying that dissonances and noises are welcome in this new music. But so is the dominant seventh chord if it happens to put in an appearance.

Rehearsals have shown that this new music, whether for tape or for instruments, is more clearly heard when the several loud-speakers or performers are separated in space rather than grouped closely together. For this music is not concerned with harmoniousness as generally understood, where the quality of harmony results from a blending of several elements. Here we are concerned with the coexistence of dissimilars, and the central points where fusion occurs are many: the ears of the listeners wherever they are. This disharmony, to paraphrase Bergson's statement about disorder, is simply a harmony to which many are unaccustomed.

Where do we go from here? Towards theatre. That art more than music resembles nature. We have eyes as well as ears, and it is our business while we are alive to use them.

And what is the purpose of writing music? One is, of course, not dealing with purposes but dealing with sounds. Or the answer must take the form of paradox: a purposeful purposelessness or a purposeless play. This play, however, is an affirmation of life—not an attempt to bring order out of chaos nor to suggest improvements in creation, but simply a way of waking up to the very life we're living, which is so excellent once one gets one's mind and one's desires out of its way and lets it act of its own accord.

Alvin Lucier
(1931)

Alvin Lucier is an American composer who pioneered in the realms of both music composition and performance, contributing to the expansion of the acoustic spectrum since the 60s.

His works experiment and explore the acoustic phenomena and the way we perceive them, and are concerned with the scientific and physical properties of sound itself. Lucier produced music by amplifying his brain's alpha waves (*Music For A Solo Performer*, 1966), picked up the vibrations of the ionosphere surrounding the Earth's magnetic field, otherwise undetectable to the naked ear (*Sferics*, 1981), and evoked room acoustics for musical purposes.

HIs landmark pieces also include *Music On a Long Thin Wire* (1977), which consists of a single long piano chord stretched between two tables, with a magnet mounted on one side, that is amplified and is triggered by people's movements in the space, and *I Am Sitting in a Room* (1969), in which Lucier records himself reading a text, plays the recording back into the room, re-records it and keeps on doing so until you are left with resonant tones and sounds.

Rediscovered about 10 years ago, Lucier's work influenced many artists on both the musical and artistic scenes. He was awarded the *Lifetime Achievement Award* by the Society for Electro-Acoustic Music in the United States and received an Honorary Doctorate of Arts from the University of Plymouth, England.

Read more in the **Biographies** section of this document.

Watch:
- Alvin Lucier's interview during the 12th Music Biennale in Venice **here**.
-Alvin Lucier's *Music for Solo Performer* **here**.

Listen to:
-Alvin Lucier's *I am Sitting in a Room* **here.**

Music on a Long Thin Wire
- Alvin Lucier and Douglas Simon

From **Chambers: Scores by Alvin Lucier**, A. Lucier & D. Simon, Wesleyan University Press, 1980, pp.163-170

In **Music on a Long Thin Wire** *I've had a better chance than in most of your other pieces of the last several years to watch a composition tale shape, to watch the technological and intellectual arts of the piece find a balance. And of course last night was an important performance of the piece, probably the most ambitious one you've tried. Do you feel as though this piece has reached completion? Is it going to change much more, or do you see elements in it that might reach a new balance in further performances?*

No, I don't think it's going to change much more, but I have to settle one last question, which is whether or not there's a critical length for the wire beyond which it doesn't yield musical results. The first experiments we did, as you remember, were on short wires; we used guitar strings that were only three or four feet long. Then we stretched longer wires along the edge of the table in the shop to about, what, eight feet? In subsequent performances, the lengths were determined by spatial or visual considerations.

In Potsdam, New York, where I first performed the piece publicly, I stretched the wire quite long, but we began cutting it, little by little, to try to solve a problem we had, or thought we had, with the resistance of the wire in relation to the amplifier driving it. Later, at a pair of concerts with Bob and David in Alfred, New York, I extended it to twenty feet, and that seemed to work beautifully. Then last night at the Diplomat Hotel we decided to use the entire floor space of the ballroom, and made the wire, as you remember, exactly thirty-six feet long. And that led to a problem. A half-hour before the concert we thought we had lost the signal from the pickup at one end of the wire, and began to take it apart; it didn't dawn on me that actually there was no problem there at all. The wire was so long that the activity at one end wasn't nearly as strong as that at the other - perhaps it had to do with where the magnet was - but when you suggested that I change the pitch slightly, the nodes shifted, and we got sound at that end. Perhaps thirty-six feet is too long. And it's funny because you would think the longer the wire, the lower the sounds would be, but during performances in which I've extended the wire up to eighteen or twenty feet, I've gotten at times the most beautiful, silvery, high, complex sounds. Last night, the very last frequency I selected was around 20 Hz. The wire was vibrating very slowly at that frequency, but then those high harmonics mysteriously began to come in.

I first got the idea for the piece in the acoustics lab at Wesleyan. We were observing the normal modes of vibration of single wires that fit our laboratory table, but when I began thinking of making a piece of music, I felt I had to change the scale. A short length of wire would look like laboratory experiments, but if you thought of it as a sound sculpture, your imagination could take that wire down the length of a room, I had to be prepared for not knowing what it was

going to sound like, although in my imagination I knew. I had an intuition that it would sound amazing. You don't want a laboratory wire to sound amazing, you just want it to divide into parts so you can prove, for example, that an octave is a natural interval.

You want a clear result. You've mentioned the change of scale that the imagination suggests; I can imagine an impossibly long wire doing impossible things.

Yes, someone suggested that I stretch a wire across the two towers of the World Trade Center, but I replied that Philippe Petit, the tightrope walker, had already done that. You know, at one point as I was working on the piece, I strung some colored beads along the wire so you could more easily see the nodal patterns as the wire vibrated. I thought of it as a one-dimensional visualization of sound in which it can only go forward and backward, but it isn't really one-dimensional because the wire vibrates up and down and from side to side. It even goes in circular motions. It would have to, wouldn't it, because of the flux field of the magnet?

Yes, which reminds me that Peter Zummo, after he'd seen the piece, said the first thing that came to his mind was the hitch-hiking gesture, the "left-hand rule" for current through a wire and the field around it. But he also said that the image didn't last very long as the piece went on.

I wouldn't have thought of that in a million years!

Well, the technical details suggest some appropriate imagery. The wire is part of a circuit, but it does nothing; there's a current running through it, but nothing interesting happens until you introduce a magnetic field. Then it starts to perform.

Don Funes, the composer at Potsdam who commissioned the piece, said he thinks of the magnet as an electronic bow. I think of the whole system as a disassembled loudspeaker.

That rising melodic gesture at the end of a phrase, as the driving signal is turned down, is intriguing. And it's unexpected that a change in the amplitude of the signal can produce a change in pitch.

Well, that's because as you put less energy into the wire it unstretches slightly and its natural vibrational modes have more effect on the remains of the forced vibration caused by the audio signal. But there's another interesting effect. If you've chosen a frequency close to a resonant frequency of the wire, it vibrates very efficiently, but if you then choose one away from a resonant peak, the wire has trouble responding and the volume decreases. I think of it as a cross-referencing system in which volume can vary pitch and pitch can vary volume, but for two different reasons. The causes and effects are so complex that they defy prediction or analysis, and this gives the piece a personality.

It's a piece that requires a sensitive performer.

Yes. You know, Davis Rosenboom is amazing in that respect. Recently he invited me to York University in Toronto to give a concert of my works including **Music on a Long Thin Wire**. We decided to ask four or five student musicians to play; when I go to a college to perform, I feel as if I should use the students there. After all, they're there for an education, and the best to learn about something is to take part in it.

Anyway, I was anxious about getting the wire to vibrate and to make beautiful sounds, so I thought immediately of using a bank of oscillators; I thought I needed the variety. But on the afternoon of the concert we had trouble getting the students together to rehearse, so David and I decided to perform the piece ourselves using only two oscillators, one for

him and one for me. We planned to play one at a time but wanted two oscillators so that we could overlap one another as we returned, hiding each other's silences. While I was setting up the **Tyndall Orchestrations** in another part of the performing space, I could hear David playing his oscillator into the wire, and I was struck by the sensitivity with which he tuned the system. It seemed that the more he reduced the power the more efficiently it vibrated. It was paradoxical. I guess there's a natural plateau above which the wire refuses to handle more power; below that point, it accepts what comes into it and interesting things start to happen. At one point, David achieved a state in which the wire would start and stop vibrating of its own accord; it would go through long cycles of marvelously complex harmonic changes.

We've talked about providing an opportunity for players to operate in a musical context without the contrasts of a musical tradition by substituting instead the constraints of a performing system, as in The Queen of the South for example. You perform many of your prices yourself; to what extent do you consider yourself a composer performer?

Well, performing my own music as well as that of my friends and of other composers, is an extremely important part of my life. There is great joy in it. It used to be that a composer would write a piece, and then hope that someone would want to play it, but now, particularly since most of our music is not written down, or at least doesn't depend on being written down to be performed, we have the alternative of going out and performing it ourselves. I value that alternative highly, but I still feel the need to write descriptions of the pieces, to make scores; the question is, what kind of scores? I have to decide whether to write them in a practical way, making them easier to distribute and perform, or in a more general visionary way, emphasizing the ideas behind the pieces. I guess I'd rather publish the ideas than the details because my work is not often practical for most performers anyway. It's unreasonable to expect people to set up the configuration for **Music on a Long Thin Wire** every time they want to do the piece, and I also don't want to clutter up the score with too much specific information about clamps, the kind of wire, the power of the magnet, and so forth. If I give them green information about how to do it, some will figure it out for themselves. Others will at least be struck by the idea and will compose similar pieces of their own. I would consider that a compliment.

I guess my work is more concerned with ideas than music. Joan La Barbara calls my music "supermusic". She said that my pieces massage her brain, that when they get started they push her almost to the edge of anger, but the imagery assuages it. She is forced to think so hard when she listens or performs, I don't know whether she was referring to her own part in **Tyndall Orchestrations** or not, that she enters a "supermusical" state.

I can't help but think that there are still other ways to use your ideas. We have interviews, performances and recordings of your music, and the scores themselves. Perhaps your audience is going to be distributed among listeners, readers and thinkers.

Well, I'm extremely pleased when my musical ideas find social uses. I heard that **Vespers** is being used in England in courses for the blind, and a few years ago I designed a special version of **Still and Moving Lines of Silence** for the Lions Gallery of the Senses at the Wadsworth Athenueum in Hartford. It was going to be a maze through which you would walk, following troughs of sound. They rejected the proposal on the grounds that it was too difficult for the very young visitors, but it might have happened. And of course I have my dream of an architectural space inspired by my and other composers' ideas of what would be necessary

and beautiful for the performances of our music. A real building might be the result of that dream, but I can't predict that; it just has to happen.

If you consider your work from **Music for Solo Performer** *of 1965 to the* **Music on a Long Thin Wire** *of 1977 and the different materials used in those pieces, do you see a connecting thread?*

Yes, it's an interest in the poetry of what we used to think of as science. I don't have any idea what attracted me to that idea; there's nothing in my background that would have predicted it. If anything, I was brought up to believe that my interests in the world were purely "artistic" and that any scientific endeavor was beyond me. I never thought I could fix anything; I would never understand how a radio worked, for example. I was never very successful in physics, or any science class for that matter. I always thought that the world was divided into two kinds of people, poets and practical people, and that while the practical people ran the world, the poets had visions about it. I felt the scientific point of view only skimmed the surfaces; artists were really the brightest people on earth. Now I realize that there is no difference between science and art.

My first approach to music was that "artistic" one, but I wasn't very successful at it. I could never settle down enough to learn to play the piano very well, though I did compose several successful student pieces for conventional instruments. I didn't get inspired until I started investigating simple natural occurrences. Some composers find inspiration in words, in setting texts to music, or in politics, or drama, or in more abstract relationships, but I can't get into those. I don't seem to be interested in the ensemble idea either, everybody playing together. I wish I were. I seem to be a phenomenologist in some ways; I would rather discover new sound situations than invent new ways to put materials together. Whenever I think of changing directions, of making something more popular or attractive to a larger audience, I lose interest very quickly, so I follow my instinct and continue making pieces with brain waves, echoes, and try to put people into harmonious relationships with them.

Music for Solo Performer
- Alvin Lucier and Douglas Simon

From **Chambers: Scores by Alvin Lucier**, A. Lucier & D. Simon, Wesleyan University Press, 1980, pp.70-78

I think we would both agree that the kernel of **Music for Solo Performer** *is the performances of brain waves. If you accept that, I'd like to ask what sort of ideas you have about the piece as a whole.*

Well, the fact that it is a live performance instead of a structured tape manipulation piece was a very crucial decision for me. It all happened when I was teaching at Brandeis. I had made the acquaintance of Edmond Dewan, a very imaginative physicist who was on the faculty at Brandeis but who was then working for the Air Force doing experiments with brain waves. They thought that certain pilots who were prone to epilepsy were blacking out when the speed of the spinning propellors got to a crucial point; I could be wrong about this, but I think it was sixteen times per second. When the sunlight would shine through the spinning props, it would lock on to something visual in the brain of the pilot. They had asked Dewan to try and investigate that, so he was doing experiments with brain waves. And it's funny because he had offered his equipments to one or two other members of the faculty at Brandeis, suggesting that they might be interested in making pieces with brain waves, but no one took him up on that.

This was 1965. I had been at Brandeis for just a couple of years, and I was at a point in my compositional life where I didn't have any good ideas. I was conducting the Chamber Chorus and I had done some electronic music in Italy when I was on a Fulbright there, but I hadn't really found anything that interested me; I certainly didn't feel like composing instrumental music. Dewan described to me this phenomenon that had to do with visualization, that by putting yourself in a non-visual state, it would be called a meditative state now, you could release the potential of the alpha that is in your head. It's a very small amount, but it would become perceptible, at least to an amplifier. The Idea of it just struck me very strongly, probably more for theatrical or visionary reasons than for sound or musical reasons, because I didn't know what it was going to sound like. Actually, it doesn't sound like anything because it's 10 Hz and below audibility; it isn't a sound idea, it's a control or energy idea. And it's amazing because most of my colleagues at Brandeis said, "Oh that's a wonderful idea. You ought to tape record it, speed the sounds of the brain waves up, slow them down, reverberate them, filter them"; they all wanted me to make a conventional tape piece with this idea. To realize that the electronics comes from your brain, from inside every person, that every person has a little electronic studio inside his or her brain, then ask you to make a classical tape collage piece that's cut and splices just…well, they all urged me to do that. The reason you love violin music is that someone is doing the playing, it's not the timbre of the violin. That's in there and is a part of it, but that's not why music for instruments is interesting, it's because a person

is playing it. So the poetic part of the piece was that at any given moment in time, some person, male or female, is sitting in a medical centre with electrodes on his or her scalp, and an analysis is being done of his or her brain waves to determine whether he or she is going to live or die. This gave me terrific anxiety, you know, because all around me were compositional people who wanted me to use technique, all of the things that you learn - contrast, pacing, texture, things of that kind. I had to eliminate those in order to get at the poetry of the piece, which demanded that a solo performer sit in front of an audience and try to get in that alpha state and to make his or her brain waves come out, to emerge with enough energy to drive an amplifier and do the piece.

Now if I had composed a tape piece, it would have been just another tape piece except for using brain waves. On the other hand, there are composers who have done it differently; instead of making tape pieces with brain waves as source material, they use brain waves to control electronics. They're doing synthesizer pieces with alpha or other waves as control signals.

So I was in the middle of that. And the anxiety I had was the anxiety not to compose but to take the existing situation, the one that every doctor knows and every person having an EEG knows, and displace it taking it right out of the hospital and putting it into the concert hall. Then it becomes art, or at least what I thought was art. I got a lot of criticism about that from colleagues of mine who found it a boring idea, who thought it didn't amount to anything because it was just brain waves. Alpha itself is below audibility; it's too low to hear as a pitch, but that high energy, those bursts of alpha, would come bumping through the loudspeakers, making the grille cloth on the speakers bump, and I got the idea of using that energy to couple the loudspeakers to instruments. I used gongs, tympani, bass drums, anything that loudspeakers could vibrate sympathetically. So the idea is that the alpha, which is produced without the person making any physical motions except the opening and closing of the eyes, which you don't really have to do if you can non-visualize with your eyes open, the idea is that that small amount of energy…see, it takes amplification very, very seriously. When I thought of using the alpha energy to drive the percussion instruments, that was the point at which the idea became a piece, when it went into a musical realm.

There's a wonderful contrast. The performer is performing live but not only isn't he physically manipulating the sound producing elements of the piece, he can't move. If he moves, he loses the alpha state and there is silence. Is that an element of the theatrical appeal?

I didn't think of it as such, but it did mean I could be very still in a musical performance. You know, most music is busy, the players have to move, the actions of a pianist, for example, are important, but in this piece electronics allows you to go directly from the brain to the instrument, bypassing the body entirely.

Most people thought the material was too simple, and I began to think I was some kind of charlatan. I suppose it appeared that I just took Edmond Dewan's brain wave apparatus and went into the Rose Art Museum and did a concert, but there was a lot of work involved in getting the musical equipment to work for music, the amplification system designed - I think we had sixteen channels - and the instruments chosen and deployed. Even doing all that, which is just as complex as doing any other kind of music, it just doesn't seem enough and I felt anxious. Now, if I had decided to make a tape piece and gone through all those technical motions, I may have felt more comfortable, but I finally did what I thought was the most honest thing. I tried to be very accurate about what the piece really meant; one person, alone, sitting very, very quietly, releasing a flood of energy which permeated the concert space. And to me, that was a beautiful idea, much more so than making

a tape piece.

I think that's clear when you consider some of the alternative suggestions you mentioned. Most of the focus on the "problem" that the material you're working with is sub-audio; you can either use it as a control for other things or you can speed it up to make it audible. Instead, you accept it as is and use it as an impulsive force to play musical instruments.

Yes, but I also did those two things that you just said I didn't do. You see, one of the inaccuracies of the title is that it's not really for solo performer. You need someone to run the amplifiers, to pan the sounds around, to turn on one loudspeaker and then turn on another, and I've always, except once in Stockholm, done it with another player, as assistant. In the score that I wrote, I stipulated that someday, when electronics became what it's now become, you could have an automatic switching arrangement, such that so many bursts of alpha would be a code to a switching device, and the alpha could control itself without an assistant.

In the meantime you have someone to turn the pages.

Right, at that time we didn't have that sophisticated switching arrangement. Also, I had pre-recorded brain waves sped up into the audio range, and at certain times during the first performances, I would have an assistant engage a switch so that a burst of alpha came through, the tape recorder would be turned on and you'd hear a higher phantom version of the alpha. So I did use pre-recorded tapes, and I did use alpha as a control signal, but they were used as extensions of the idea and were not the essential idea.

This piece really has a theatrical flavor. How much of that had you done prior to this piece?

Earlier in Rome, in 1962, I had done **Action Music for Piano**, for which I had made a very elaborate score that described the gestures of the pianist, extraordinarily exaggerated movements of the hands and arms and elbows. So when **Music for Solo Performer** came along, I was prepared to do that, to accept the theatrical, although when I use the word "theatrical", I feel cheapened somehow.

Because it isn't play-acting, it's real.

Well, in one sense, everything is theatrical. Do you know the Shakespeare saying?

"All the world's a stage"? No, I was thinking of the Borges story **On Universal Theatre**. It's a marvelous story in which people ride bicycles, smoke, mail postcards; they don't do anything they wouldn't do otherwise, but they know they're doing it. If as you're doing everyday things, you think that they aren't everyday things, you'd be in the ultimate theatrical setting. So, in **Music for Solo Performer**, all I did was take the EEG situation as a whole and, by doing that, make a celebration of the event.

When the person is producing the alpha in performances, he or she is overcoming an obstacle, and the compositional mentality utilizes that in a positive way as a philosophical statement, the idea that the situation in the room is an extension of one's brain.

There are a number of paired oppositions in this piece when you start to think about it - the spatial distribution of sound controlled from one point, the performer producing sound by not moving, the unconscious control of sound. The more you go into the piece, the more strange twists you can find.

I don't think I would have done the piece if it were possible to change the alpha by changing emotional states. One of the first things that

anyone ever asks me is: "Can you change the quality of the alpha by having another thought, a different kind of thought?" They want to think that if you get angry the alpha will go up or if you get sad it will go down. And of course, that isn't the case at all; it just goes on and off, the 10 Hz pulses are irregular because it's difficult to maintain a perfectly meditative alpha state. Those bursts of alpha that go through the amplifier and drive the loudspeakers, the complexity of the signal and the fact that it is making the cone of the loudspeaker work to resonate objects, or membranes on a drum, or the cardboard in a box, those live, physical events are the compositions of the piece to me.

I used to get letters from people asking about such things as formant structures and biofeedback and I just don't know how to answer them because the piece isn't about that. I remember when I was in school it became very fashionable to regard music as a series of problems to be solved. The musical journals were filled with titles such as "Pitch Problems In So-and-So", or "Problems of This-and-That". The only problem I have in composing is to get the imagery, the idea and sound-image right, and if I had tape recorded this piece… you know, there's a way to explain it in terms of accuracy. By tape recording it, you lose the life of the sounds because the dynamic range of tape isn't that good, Also, at that time we were concerned with letting sounds be themselves and it seemed to me that to cut and splice was not the way to let alpha be itself.

It's a matter of choosing not to control.

Yes, I remember we discussed the proportions that have existed in previous music. The ideas of contrast and balance come from another place; they have nothing to do with alpha. It's so wonderful because the minute you say it doesn't, you find that you've done exactly that; I did have contrast between gongs and cymbals and drums. Perhaps I chose percussion because I used to be a percussion player. I remember when I was young, studying drumming, I started practicing on a rubber pad and then moved to a snare drum. You didn't need anything else, you didn't need pitches. And after all, alpha's really a rhythm; scientists call it alpha rhythm.

It's low enough to be considered rhythm as opposed to pitch.

Yes, and although theoretically is it a continual pattern of 10 Hz, it never comes out that way because it stops when your eyelids flutter or you visualize a little and it tends to drift down a little bit if you get bored or sleepy. So I exploited that rhythmic idea and extended it to the drums. It was very natural for me to make a percussion piece; to have tried to make it a pitched piece in some way would have seemed bizarre and grotesque. It's funny, to me sharp contrast is a banal idea. If you look at a painting with contrasting foreground and background, it just doesn't seem right somehow. When you think about it, it is a very easy idea; if you don't know what else to do, you just do something different from what you did. It seems to me that the most interesting differences are small ones, slight subtle changes.

Differences that don't break the thread.

Right, it's trying to get the maximum information out of the least contrast. Those big emotional changes you find in a Beethoven sonata, for example, worry me. They seem childish; you're happy one minute and sad the next. And when people say that electronic technology is cold, they really mean that it doesn't have those self-indulgent emotional changes.

The elevator here at the Gramercy Park Hotel is an example. I go up and down it very often and I've timed the response from when you touch the button, a beautiful, light, touch-sensitive one, to when the door closes. It's

usually from three to four seconds. And you'd be surprised how many people don't even want to wait that long; they think something is the matter and start pushing the button sharply and repeatedly. Now the time response of the elevator was designed by somebody, some very sensitive engineer or group of engineers who decided what would be a graceful timing, not too fast and not too slow, and generally the people who are impatient with it are not in a graceful state when they get it. I almost want to tell them that the elevator is more graceful than they are. The time response of that elevator, if you were to pay attention to it, if you were to surrender to it, would be therapeutic because your mood or feelings would change between the time you got into it and the time you got out; the ride down is very, very beautiful. I think if you let the elevator teach you something, you could step out of it feeling more graceful.

Pauline Oliveros
(1932)

Pauline Oliveros is a senior figure in contemporary American music. Her career spans fifty years of boundary dissolving music making. In the '50s she was part of a circle of iconoclastic composers, artists, poets gathered together in San Francisco.

Recently awarded the John Cage award for 2012 from the Foundation of Contemporary Arts, Oliveros is Distinguished Research Professor of Music at Rensselaer Polytechnic Institute, Troy, NY, and Darius Milhaud Artist-in-Residence at Mills College.

Oliveros has been as interested in finding new sounds as in finding new uses for old ones --her primary instrument is the accordion, an unexpected visitor perhaps to musical cutting edge, but one which she approaches in much the same way that a Zen musician might approach the Japanese shakuhachi. Pauline Oliveros' life as a composer, performer and humanitarian is about opening her own and others' sensibilities to the universe and facets of sounds.

Since the 1960's she has influenced American music profoundly through her work with improvisation, meditation, electronic music, myth and ritual.

Pauline Oliveros is the founder of "**Deep Listening**," which comes from her childhood fascination with sounds and from her works in concert music with composition, improvisation and electro-acoustics. Pauline Oliveros describes Deep Listening as a way of listening in every possible way to everything possible to hear no matter what you are doing. Such intense listening includes the sounds of daily life, of nature, of one's own thoughts as well as musical sounds. Deep Listening is my life practice," she explains, simply. Oliveros is founder of Deep Listening Institute, formerly Pauline Oliveros Foundation, now the Center For Deep Listening at Rensselaer.

From **www.paulineoliveros.us**

Deep Listening: A Composer's Sound Practice
- Pauline Oliveros

from **Deep Listening, A Composer's Sound Practice**, Pauline Oliveros, iUNIVERSE, 2005, pp. xxi-xxv

What is Deep Listening?
This question is answered in the process of practicing listening with the understanding that the complex wave forms continuously transmitted to the auditory cortex from the outside world by the ear require active engagement with attention. Prompted by experience and learning listening takes place voluntarily. Listening is not the same as hearing and hearing is not the same as listening. The ear is constantly gathering and transmitting information - however attention to the auditory cortex can be tuned out. Very little of the information transmitted to the brain by the sense organs is perceived at a conscious level*. Reactions can take place without consciousness.

So what is consciousness?
Consciousness was considered an epiphenomenon by the scientific community and not seriously studied until more recently*. Consciousness had no location. Furthermore, evoked potentials in the brain appear up to a half second* before the individual is aware of a stimulus. The brain then remembers the stimulus as happening in the present moment or the immediate instant in one's sense of time. So perception in time is an illusion.

So what is consciousness?
Consciousness is awareness of stimuli and reactions in the moment. Consciousness is acting with awareness, presence and memory. What is learned is retained and retrievable. Information, knowledge of events, feelings and experiences can be brought forward from the past to the present. In this way one has self recognition.

The ear makes it possible to hear and to listen.
To **hear** physically means that vibrations or wave forms that are within the range of human hearing (in frequency typically 16hz to 20,000hz) can be transmitted to the auditory cortex by the ear and perceived as sounds. However, the word hear has many more dynamics and meanings within a cultural history that is continually changing.

To hear according to the Miriam Webster Dictionary can mean "to listen attentively, or that information has been received especially by ear, or to hear somebody or some thing, or to consider something officially as a judge, commissioner, or member of a jury, or to fully understand something, or to attend Mass or hear confession in a Roman Catholic Church".

Listening has very little definition compared to hearing. Though the two words are often used interchangeably their meanings are different. To listen according to the Miriam Webster Dictionary means "to give attention to sound or sounds or to perceive with the ear, to hear with thoughtful attention, to consider seriously".

To hear and to listen have a symbiotic

relationship with somewhat interchangeable common usage.

I differentiate to hear and to listen. To hear is the physical means that enables perception. To listen is to give attention to what is perceived both acoustically and psychologically.

Hearing turns a certain range of vibrations into perceptible sounds.
(Jonathan Sterne, The Audible Past, Duke University Press, 2003, pg 96)

Listening takes place in the auditory cortex* and is based on the experience of the waveforms transmitted by the ear to the brain. We learn to associate and categorize sounds such as mama, papa, meow, running water, whistles, pops, clicks and myriads more sounds through experience. Many waveforms after first experience are discarded unnoticed without interpretation. Understanding and interpreting what the ear transmits to the brain is a process developing from instantaneous survival reactions to ideas that drive consciousness. The listening process continues and can be cultivated throughout one's lifetime.

The word *listen* also has a cultural history and changing dynamics.

"The relationship between the physical stimulus and the phenomenal perception is not clear cut. The phenomenal world of the acoustic events of a listener is not necessarily that described by the physical properties of the sound energy. There is no sound pressure-variation that will always lead to one and only one perception. Similarly, there is no perception that always comes from one and only one pressure variation. If the converse were true---- If for every different sound percept there were a unique pattern of sound pressure and if each different sound pressure pattern led to a unique percept--- then the problem of auditory perception would be solved and not by psychologists. It would be solved by physicists who could accurately measure the sound pattern. Perceiving would become rote memorizing: all that would be necessary would be associating each sound pattern with its name or meaning.

This is not the case. Listening is not the same as hearing. The physical pressure wave enables perception but does not force it. Listening is active. It allows age, experience, expectation and expertise to influence perception." Stephen Handel

So what is Deep Listening?
Deep has to do with complexity and boundaries or edges beyond ordinary or habitual understandings i.e. "the subject is too deep for me" or "she is a deep one". A subject that is "too deep" surpasses one's present understanding or has too many unknown parts to grasp easily. A "deep one" defies stereotypical knowing and may take either a long time, or never to understand or get to know.

Deep coupled with *Listening* or *Deep Listening* for me is learning to expand the perception of sounds to include the whole space/time continuum of sound – encountering the vastness and complexities as much as possible. Simultaneously one ought to be able to target a sound or sequence of sounds as a focus within the space/time continuum and to perceive the detail or trajectory of the sound or sequence of sounds. Such focus should always return to, or be within the whole of the space/time continuum (context).

Such expansion means that one is connected to the whole of the environment and beyond.

What's the difference between Deep Listening and meditation?
Deep Listening is a practice that is intended to heighten and expand consciousness of sound in as many dimensions of awareness and attentional dynamics as humanly possible.

The source for Deep Listening as a practice

comes from my background and experience as a composer of concert music, as a performer and improviser. Deep Listening comes from noticing my listening or listening to my listening and discerning the effects on my mind/body continuum, from listening to others, to art and to life.
Deep Listening is a practice and term that does not come from any religious context even though the words sometimes are used by religious practitioners. Thich Nhat Hanh is a Zen Buddhist monk whose usage of the term "deep listening" has a specific context as one of the "Five Mindfulness Trainings" that he proposes. This is a compassion-centered listening to restore communication in order to relieve suffering and bring happiness to all beings. Listening (as a practice in this sense) would be training to respond with calmness and clarity of mind. It is a determination and commitment to reconcile and resolve conflicts.

Meditation in all the meanings of the word is found and defined in diverse religions and spiritual practices. Meditation is used in all its rich variety of meanings to calm the mind and to promote receptivity or concentration. In religious settings attention is directed to moral and ethical issues, values, beliefs and tenets of the particular faith and to connection with the divine, or a divine being, or beings.

Whether one is dwelling on something carefully and continually, or engaging in a serious study of a particular topic, planning or considering an action, meditation both religious and secular is attention engaged in particular ways - there is emptying, expansion and contraction of the mind: there is relaxation or "letting go" and focus (attention to a point). Meditation implies discipline and control. There is something to practice!

Deep Listening is a form of meditation. Attention is directed to the interplay of sounds and silences or sound/silence continuum. Sound is not limited to musical or speaking sounds but is inclusive of all perceptible vibrations (sonic formations).

The practice is intended to **expand consciousness** to the whole space/time continuum of sound/silences. Deep Listening a process that extends the listener to this continuum as well as to focus instantaneously on a single sound (engagement to targeted detail) or sequences of sound/silence.

In order to get to the discipline and control that meditation develops, relaxation as well as concentration is essential. The practice of Deep Listening is intended to **facilitate creativity** in art and life through this form of meditation. Creativity means the formation of new patterns.

Animals are Deep Listeners. When you enter an environment where there are birds, insects or animals, they are listening to you completely. You are received. Your presence may be the difference between life and death for the creatures of the environment. **Listening is survival!**

Humans have **ideas**. Ideas drive consciousness forward to new perceptions and perspectives.

Sounds carry **intelligence**. Ideas, feelings and memories are triggered by sounds. If you are too narrow in your awareness of sounds, you are likely to be disconnected from your environment. More often than not urban living causes narrow focus and disconnection. Too much information is coming in to the auditory cortex, or habit has narrowed listening to only what seems of value and concern to the listener. All else is tuned out or discarded as garbage.

Compassion (spiritual development) and **understanding** comes from listening impartially to the whole space/time continuum of sound --- not just what one is presently concerned about. In this way discovery and exploration can take place.

New fields of thought can be opened and the individual may be expanded and find opportunity to connect in new ways to communities of interest. Practice enhances openness.

The level of awareness of soundscape brought about by Deep Listening can lead to the possibility of shaping the sound technology and of urban environments. Deep Listening designers, engineers and city planners could enhance the quality of life as well as sound artists, composers and musicians.

III. Workbook

1. Stretching the domain of the audible

"In La Monte Young's spaces at that time, I learned the power of whole-number justly tuned intervals in acoustically responsive spaces with subtly used speakers and amplification. The other needed aspect of this experience is time: time in which to slow the brain, stop being physically agitated, and listen deeply into sound and space."

- Arthur Stidfole, "The Box Gets in Your Head"

Listening Device, Undated

This section's exercises revolve around what we can hear and in which conditions. The idea here is to explore the actual limits of the audible in relation to the physical spaces we are in through listening, recording and re-listening.

A. Making Silence Audible

Members of the group take turns organizing a moment of silence: everyone in the group talks at the same time, until you give a signal for one second of silence. Imagine different rhythms: How is the moment of silence affected and informed by the length of the talking and its loudness?

B. Exploring the Limits of Recognition:

The exercise is about decomposing a sentence: record the sentence then load it on a basic computer program (Movie Maker, iMovie, ...) and progressively slow it down. What is the limit after which the sentence cannot be understood anymore? Compare each participant's perception of this limit.

C. Borders, Reflections and Infiltrations

Record the same sound/word in different spaces, different ambient sounds: How does the space and its permeability manifest in the recording? What is absorbed? What is reflected? What is added? What is amplified?

D. The Space that Sounds Define

Play a sound is a soundproof space and mark the limit of its audibility. Then play it in an open space and measure the distance at which you hear it. Accordingly, draw forms on the ground which could be seen as the shape of diffusion of a sound.
Try this again in a space where an obstacle refracts the sound.

Gordon Monahan, "Speaker Swinging", 1982

2. Listening to Objects, Materializing the Voice

In 1961, American artist Robert Morris presented the viewers with "Box with the sound of its own making", a wooden box with the three-and-a-half-hours recording of its making process, from beginning to end. Drawing on this case, the exercises in this section revolve around the sound of objects and the stories they can tell, as well as on the ways we can translate and transmit sounds into different mediums. Another reference would be La Monte Young's "Poem for chairs, tables and benches", 1961.

Robert Morris, "Box with the sound of its own making", 1961

A. From Sound to Story

Identify and name three objects which sounds are very small but important: the key unlocking a door, the paper unwrapping a candy, etc. Build a story about them.

B. Keeping Record of Noise

Try to record a noise with different means : by description, by visual representation, by voice/sound recording, or else. Try to imitate them with the voice: What can be transmitted and translated through human voice?

La Monte Young, “Poem for chairs, tables and benches”, 1960 | Watch an excerpt **here**

3. Seeing Hearing

The work of artist and composer Christian Marclay explores the relation between sound and the visual arts, often creating pieces that turn sound into a physical, palpable form. The exercises in this section aim at exploring this same relationship and trying to make sound visible using mappings, descriptions, experiments, etc.

Listen to Marclay in "Talking Art" **here**.

Christian Marclay, "Guitar Drag", 1982

A. Mapping the Sounds

Start by listening to the ambiant sound long enough to identify its different sources. Draw a map showing the origins of each sound you can hear: a place for each sound you can find. Imagine directions, connections, etc.

B. Simultaneous Listening

A person picks a spot to stand on and start reading a text not too loud. Another person picks another spot to stand on and sing a song, not too loud, etc. Keep listening to all the different sources: how do you perceive these sounds? How do they affect each other? How to you perceive the moment in between spoken words?

C. Perceiving without Seeing

Try to identify the characteristics of the space through listening: invert looking while closing your ears, and listening while closing your eyes. Explore the difference between the protective function of the eyelid and the partial covering of the ears by your hands…

D. Mixing the Sounds of Images

Look at a film while listening the soundtrack of another film; Look at a romantic film while listening to news on the radio, etc: how do sound and images inform each other? what informs your perception of the plot: the sound or the image?

4. Soundtracks of the Public Space

Luigi Russolo, "The Art of Noises", 1913

A. The Sounds of Cities

Make a list of what you can and cannot hear in your city: which sound is the most specific? Try and imagine the sounds of a city you have never visited: Tokyo, New-York, Delhi, etc...
Try to make your own city's "sound": find elements of architecture, landscape, nature etc that would produce a sound you can "play".

B. Sounds and Stories of the Public Space

Go for a walk and record the sounds of your path. Listen to the recording when you come back: Can you reconstruct the sequence of the walk using the sound trace? Can you tell your friends the story of the street based on this recording?
Now give the recording to a friend who was not listening to your narrative, and ask them to build a story using your soundtrack. Compare your stories.

IV. Additional Readings

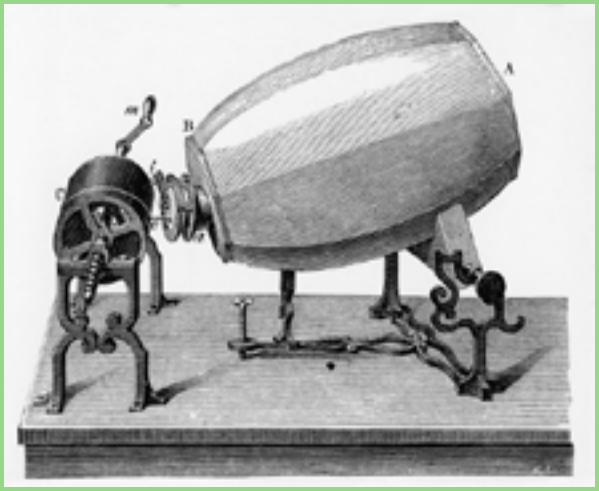
The conditions in which we listen, the means by which we transmit this experience and the contemporary practices in the realms of sound and music are at the heart of *Esma'/ Listen*. This section proposes readings that address questions related to the contemporary forms of listening through different approaches and disciplines.

Shane Butler's excerpt from *The Ancient Phonograph* questions the notions of sound transmission and recording prior to the invention of the phonograph, tackling issues related to the realms of theater, oration, singing, and aiming at rethinking the voice as an anatomical presence. In *The Archi-Road Movie*, Peter Szendy explores the "routing of the senses" in road movies and problematizes the notion of our sound perception. He suggests a sound equivalent to the "Blickbahn" (or the "pathway of a look"): the "otoroad".

Alvin Lucier's and Arthur Stidfole texts, respectively *The Propagation of Sound in Space* and *The Box Gets in Your Head*, explore the acoustic and spatial characteristics of sounds. The first from the perspective of his own pioneering works, and the latter through the listener's perception, focusing on the way the hearing experience is heavily influenced by the spaces themselves and how the artists use them.

As for Douglas Kahn's *Sound Art, Art, Music*, it questions the denomination of Sound Art, exploring both its limitations and its capillarity.

These readings do not pretend to give specific answers or directions, but rather to suggest openings and a deeper questioning of the issues at stake here, as well as to trigger further discussions and exchanges about and around the topic.



Phonautograph (c 1857)

Marcel Duchamp, A Bruit Secret, 1913

The Ancient Phonograph
- Shane Butler

from **The Ancient Phonograph**, Shane Butler, Zone Books, 2015, pp.11-29

Shane Butler is professor of classics at Johns Hopkins University. He is the author of The Hand of Cicero (Routledge, 2002) and The Matter of the Page: Essays in Search of Ancient and Medieval Authors (University of Wisconsin Press, 2011), and co-editor of Synaesthesia and the Ancient Senses (Acumen, 2013).

In The Ancient Phonograph, Shane Butler searches for traces of voices before Edison, reconstructing a series of ancient soundscapes from Aristotle to Augustine.

The voice makes people write.
- Michel de Certeau, *The Practice of Everyday Life*

"Good morning. How do you do? How do you like the phonograph? Thus did Thomas Edison's cheerful new machine greet the editors of Scientific American, "to the astonishment of all present."[1] For media theorists, this was one of history's great turning points, and Friedrich Kittler, who begins his account of modern media in Edison's laboratory, looks forward from the recorded salutations of 1877 to a world that, almost at once, would never be the same.[2] The present book looks instead back — indeed, far back, not only before Edison, but long before Marshall McLuhan's earlier starting point of Gutenberg,[3] to an age for which, from our own distant perspective, even writing itself was still relatively new. To return with the right ears to those early chapters of Western writing, I shall argue, is to hear something no less astonishing than what rose from the spinning cylinder of the "wizard of Menlo Park." "How do you like the phonograph?": the new machine's name was a neologism, but like the roots from which that name was compounded, its question was an ancient one.

Etymologically speaking, a "phonograph" proposes to write (*graphein*) the voice (*phônê*). Edison would monopolize the term but did not invent it, for linguist Edward Hincks had used it earlier in the century to designate those Egyptian hieroglyphs that were "representations of sounds," and the word had entered the general lexicon via an invention that had spread as rapidly as Edison's would: Isaac Pittman's system of shorthand, described in his 1845 Manual of Phonography, or Writing by Sound.[4] Pittman and Edison alike thus used the word to announce the arrival of a new kind of writing, but Hincks reveals the subtle problem in this act of branding, for any form of writing that purports to represent speech, such as the ancient syllabic cuneiform he is famous for having deciphered or the alphabetic script in which the words on the present page are written, is in some sense phonographic. Pittman was largely reacting to the vagaries and complexities of English spelling, but Edison's phonographic claim ultimately rests on a far deeper problem, one which, in fact, we can trace back to one of their shared etymological roots, *phônê*. We shall turn in earnest to this problem in this book's first chapter, but let us anticipate that discussion simply by noting that the Greek word means both "speech" and "voice." If the former meaning makes even the most pedestrian alphabetic texts at least notionally phonographic, in the sense that they

inscribe something that has been or could be spoken, the latter leads to conclusions that are far less clear. What did it mean to seek to write the voice long before Edison, in faraway Greece and Rome? This question has inspired this book. What has emerged by way of answer is, for its author, a startlingly unfamiliar picture of the aims of ancient writers, striving to capture the voice precisely as something conceptually distinct from language, even if largely inseparable from it. Indeed, the case studies that follow reveal that this voice was more than just a recurring object of desire: rather, it was in antiquity something like the raison d'être of the very category of literature, the texts of which it may even invite us to read as the single experiments of a unified project of phonographic research, stretched out over centuries.

Let us linger for a moment longer among the recorded voices of a more recent past. Early rivals to Edison's phonograph were the "graphophone," from the laboratories of Alexander Graham Bell, and the "gramophone," whose inventor, Emile Berliner, would perfect the flat-disc records that eventually displaced Edisonian cylinders. Though the variation in brand names is partly arbitrary, the inversion of syllables arguably reflects a subtle shift in focus away from the marvelous machine that turned voices into records to the proliferating devices that, in the comfort of countless homes, were turning records back into voices. At the same time, in Berliner's substitution of gram- (from the Greek gramma, "letter of the alphabet") for graph-, we may perhaps detect a look not so much forward as around and back, to mass consumption of the various products of the far earlier invention of the printing press.[5] Novel as it was, the phonograph-gramophone entered bourgeois life in the familiar guise of the fireside reader, a fact from which we may draw two important lessons. First, one cannot go looking for phonographic writing independent of gramophonic reading, for any history of media must also be a history of media players (lecteurs, as the French prefer to call them, maintaining the redeployment of writerly language that attended the rise of digital media). Second, the very age that invented the phonograph regarded the gramophonic reanimation of its inscribed voices sufficiently like ordinary reading to market it as such, a strategy that paradoxically captures for us a glimpse of the readerly expectations which Edison's cylinders and Berliner's disks would immediately begin to transform.

These lessons return us to the contradiction that continues to lurk in our own understanding of the relationship between voice and text. While, in one sense, we regularly assume that the voice is indeed what writing captures, especially writing that is "phonetic" (i.e., alphabetic or syllabic), we simultaneously suppose that the voice is precisely that quantity which, before Edison, eluded transcription. We seem to ourselves to resolve this paradox by asserting a distinction between the linguistic voice, which writing has long recorded, and the extralinguistic voice, which had to wait for the phonograph. But centuries of literary texts are filled with — and at least partly defined by — phonic features that cannot be reduced to a function that is, strictly speaking, linguistic, even if we might be inclined to call some of them "expressive" or "communicative." It will be the contention of this book that the ensemble of such features, added to writing's linguistic work, long constituted what we should identify as a phonographic claim. Well over a century of record playing, on a series of machines, has partly deafened us to this claim, even in the case of classical literature, which, as we shall hear, practically shouts it. To be sure, we shall not entirely disagree with Michel de Certeau, for whom the voice is an elusive object of desire that forever propels writing forward. But we shall forgo any post- Edisonian pessimism about the ability of earlier voice-writers to get some satisfaction — or even to provide such now for their acoustically overloaded twenty-first-century readers.

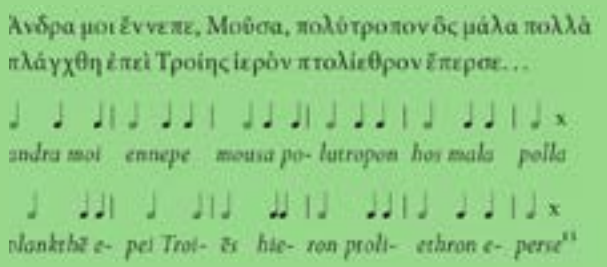
Let us therefore begin again, setting aside more recent phonographs and conjuring that far earlier Edison who, millennia even before Homer, first dazzled his prehistoric contemporaries with a stylus that scratched words into pliant matter — perhaps the same Mesopotamian mud out of which his successors would shape countless cuneiform tablets. Certainly it has been common to assume that, from the start, his aim was to represent spoken language. Strictly speaking, however, we cannot exclude an alternative hypothesis, namely, that his writing sprang, independently, from the same linguistic instinct that had generated human speech; these two forms of language would have been correlated in a second moment (even if this came quickly), through triangulation with their shared ends. Finally, let us imagine an even more radical possibility that detaches writing's origins from any linguistic purpose at all. In this hypothesis, the first writer's aim was the same as Edison's: to capture the voice itself. A grounding in the linguistic voice simply made that task feasible, exploiting speech's existing reduction of the countless variety of sounds human voices can make.

In truth, no such proto-Edison ever existed. Writing developed slowly over millennia, cheek by jowl with other mediated modes of human expression and interaction; its origins, in a current reading of surviving evidence, are best understood as a representation neither of speech or of voice; indeed, it is not even clear that we should regard them as linguistic at all; in the beginning, writing was not "an extension of speech" but "an extension of drawing."[6] But numerous efforts to imagine him (or her: in Rudyard Kipling's "How the First Letter Was Written," the inventor is a little girl) are revealing all the same, for like most mythical points of origin, he embodies tensions that endure in the tradition we would trace back to him.[7] This book will approach that tradition at a point after the invention of writing[8] — and in particular, of alphabetic writing — has fully been accomplished and writers have begun to take the most basic tools of their trade for granted. Nevertheless, we shall find in some of the texts they produced an enduring doubt about writing's root purpose. To be clear, that doubt has not entirely left us, even today, though Edison's wizardry has distracted us somewhat from it. Antiquity's remoteness from us, even more than its relative proximity to writing's origins, will help to bring this doubt to the fore in the pages that follow, even in the case of more recent comparanda.

The tension essential to this doubt may perhaps best be understood in terms of the alphabet itself, the single elements of which are capable of expressing sounds that are less than words, but which, as an ensemble, simultaneously makes possible the inscription of something that is more than (mere) language. This latter category is dominated by that class of texts we have come to call "literature," after the Latin word for the very letters (litterae) of the alphabet. In such texts, literary heights plunge back to their alphabetic base in search of such "sound effects" as alliteration: to give us more than words, the writer calls our attention to what is less than one. Far older than writing itself, "alliteration was one of a number of phonetic figures available to the Indo-European poet,"[9] or to put this slightly more carefully, the poet's deliberately dense repetition of consonants long predates the invention of the letters that represent these consonants in writing and so give "alliteration" its name. Any writing system that corresponds to fairly stable conventions of speech can capture such phonetic figures (i.e., one hears them when reading), but alphabetic writing actually represents them (i.e., they are as visible as they are audible, at least to the extent to which its letters continue to match, one-to-one, the constitutive sounds of speech). This has led one scholar to call the Greek alphabet, capable of representing both consonants (aspirated and unaspirated) and vowels, "the first technology capable of preserving by mechanical means a facsimile of

the human voice."[10] The same scholar goes on to argue that the Greek alphabet must have been devised for the express purpose of writing down poetry, perhaps that of Homer.[11]

The thesis of a sudden poetic origin for the Greek alphabet has found little favor among those who argue instead for its gradual emergence around more prosaic tasks — and in any case, recent evidence would seem to leave little doubt that the Greek alphabet predates the transcription of the Homeric poems themselves.[12] The question of the alphabet's origins, though, may not really be the most interesting part of this puzzle. Sooner or later, someone began to write down, for example, the first lines of the Odyssey: "Tell me, Muse, of that wily world-traveler who so often was driven off course, once he had sacked the sacred city of Troy." And what we resolutely cannot know is whether that writer sought primarily to capture the address to the Muse that survives in my translation, or, instead, the music of the poem's repeated consonants and metrical vowels, lost in translation but able, respectively, within limits we may momentarily ignore, to be transliterated into our own alphabet and transcribed into the relative durational values of modern musical notes:



One way or another, writing recorded not only the singer's sense, but also no small part of his sensuous sound, both of which continue to drive the poem forward long after its opening lines, even while pushing its protagonist and namesake extravagantly off course. Naturally, we could say much the same about the continuing odyssey of classical poetry in Homer's wake. Indeed, looking back over the combined poetic-alphabetic tradition, it seems hard to imagine any point (including its point of origin) at which letters seemed the building blocks of language alone.

Notes

1."The New Phonograph," *Scientific American Supplement* 632 (1888), 10096, celebrating the demonstration's tenth anniversary.

2.Freidrich A.Kittler, *Gramophone, Film, Typewriter,* trans. Geoffrey Winthrop-Young and Michael Wutz (Stanford: Stanford University Press, 1999), 21-114. So, too Lisa Gitelman, *Scripts, Grooves, and Writing Machines: Representing Technology in the Edison Era* (Stanford: Stanford University Press, 1999). By contrast, Jonathan Sterne, *The Audible Past : Cultural Origins of Sound Reproduction* (Durham, NC : Duke University Press, 2003), professes "distaste for the cult of Edison in phonograph historiography" (29) and accordingly covers broader technological ground and reaches back, "archeologically" (7) through the nineteenth and eighteenth centuries, since "many of the practices, ideas and constructs associated with sound-reproduction technologies predated the machines themselves" (1). Interestingly, Sterne settles on a simple definition of "sound-reproduction technology" through its use of "*transducers*, which turn sound into something else and that something else back into sound" (22). It is not clear, however, how this definition fails to fit certain practices of writing and reading.

3. Marshall McLuhan, *The Gutenberg Galaxy: The Making of Typographic Man* (Toronto: University of Toronto Press, 1962).

4. "phonograph, n.," OED Online, http://www.oed.com/view/Entry/142654, accessed July 12, 2013.

5. *Grammê,* "line," would be a less obvious but arguably more suitable root, but the *OED* surmises that Berliner coined the term by inventing "phonogram," widely used since 1864 for characters of Isaac Pitman's shorthand (also called "phonographs") and already applied by some to phonograph records. Alphabetic writing was called "phonographic" (vs. "ideographic") as early as 1828; also influencing Edison's coinage (and the design of his machine) was Edouard-Leon Scott de Martinville's "phonautograph", which represented (but did not reproduce) sound vibrations. See the

folloeing entries in the OED Online: "gramophone, n.,"http://www.oed.com/view/Entry/80603, "phonogram, n.," http://www.oed.com/vire/Entry/142653, "phonographic, adj.," http://www.oed.com/view/Entry/142656, accessed July 12, 2013.

6. These last two opposed phrases are from Roy Harris, *The Origin of Writing* (London: Duckworth, 1986), 25-26. Harri's arguments are provocatively expanded and refined by David R.Olson, *The World on Paper: The Conceptual and Cognitive Implications of Writing and Reading* (Cambridge: Cambridge University Press, 1994), 65-90, with extensive references. For a brief introduction to writing's prehistory that is also very easy on the eyes, see Johanna Drucker and Emily McVarish, *Graphic! Design History* (Upper Saddle River, NJ: Pearson Prentice Hall, 2009), 2-27, abridged in the second (2013) edition.

7. On such stories, see Harris, *Origin*, 1-28.

8. On its evolution from other kinds of "phonographic" writing (versus "logographic" writing), see Olson, *Worlds*, 78-84.

9. Calvert Watkins, *How to Kill a Dragon: Aspects of Indo-European Poetics* (New York: Oxford University Press, 1995), 23.

10. Barry B.Powell, "Homer and Writing," in *A New Companion to Homer*, ed.Ian Morris and Barry B.Powell (Leiden: Brill, 1997), 25.

11. Ibid.; a fuller version of his arguments can be found in Barry B.Powell, *Homer and the Origin of the Greek Alphabet* (Cambridge: Cambridge University Press, 1991).

12. "The vital connection between Homeric epic and the advent of the alphabet is essentially the opposite of that one promoted by Powell and his predecessors in this effort. The desire to write down Homer did not precipitate the creation of the Greek alphabet. Rather, the creation of the alphabet resulted in a writing down of Homeric verse": Roger D.Woodard, *Greek Writing from Knossos to Homer: A Linguistic Interpretation fo the Origin of the Greek Alphabet and the Continuity of Ancient Greek Literacy* (New York: Oxford University Press, 1997), 256. See, further, Roger D.Woodard, "Phoinikêia Grammata," in *A Companion to the Ancient Greek language,* ed. Egbert J.Bakker (Chichester, UK: Wiley-Blackwell, 2010), 25-46.

13. Notation and transcription reflect epic correption of the final vowel of πλάγχθη

The Archi-Road Movie
- Peter Szendy

from **The Senses and Society**, Volume 8, 2013, pp.50-61

Peter Szendy is Professor of Philosophy at the University of Paris Ouest Nanterre and musicological advisor for the concert programs at the Cité de la musique. Visiting Fellow in the Council of Humanities at Princeton University, he has been the senior editor of Ircam's journal and book series Les Cahiers de l'Ircam.

Abstract *Every film is the opening or pathway of a world, of what Jean-Luc Nancy has called a "cineworld." The road and the road movie are more than the figure or metaphor of such a pathway, they are the schema that drives it, or as Nancy writes in The Evidence of Film , a "schema of experience." Cinema thus becomes a vehicle for the "routing" of the senses, each time singular and unique, and for the way they are attached to one or another of the points where their paths meet. This is what for the eye and the ear I will call, respectively, the cinematic "optoroute" and "otoroute," whose effects I trace and describe in a number of films, including Lost Highway (David Lynch, 1997), and Deathproof (Quentin Tarantino, 2007).*

If I were to choose one single keyword to indicate the direction or route my article will take, it would undoubtedly be the word: Blickbahn.

This German word is unusual; it is unfamiliar, as Jean-Luc Nancy notes: "a rare term, which literally means 'the pathway, or clearing movement, of a look'" (Nancy 2008: 108). Yet we also find this unusual word from time to time in Heidegger: not only in §42 of the Beiträge Nancy refers to, but also, for example, in the Introduction to Metaphysics (from §45 on, where it appears with a prefix attached as Vorblickbahn, to express a sort of (pre-)perspective opened up even before the gaze becomes absorbed in it[1]), or again in the Origin of the Work of Art, in The Principle of Reason …

So I would like to take this strange term as a watchword or signpost (Leitwort, or "guiding word," as Heidegger would say), and in following its track I will let myself be driven, drawn, or carried along in what will resemble a road movie, in the company of Jean-Luc Nancy. "Road movie" could, moreover, be a translation – certainly a clumsy and inaccurate one, on the face of it – of Blickbahn.

Let us put a few images to this word Blickbahn. Let us imagine what a film, whose screenplay is reduced to this one, unusual word, would look like.

We would perhaps see and hear what is heard and seen in the opening credits of David Lynch's Lost Highway (1997): the sound of the wind and of a car's engine, its headlights on, as it races madly along a broken yellow line separating the two lanes of a tarmac road which plunges headlong into the night. As the names of the actors and the film's title appear on the screen as if smashing into the windscreen, in yellow letters like road signs, we hear the voice of David Bowie in "I'm Deranged" (from his 1995 album Outside), this voice that floats strangely over an exuberant rhythm section –

and we also catch fragments of spoken words as they fly past, "how secrets travels," and "cruise me babe," both in the sense of "pick me up," or "drive me" … The screen gradually turns completely dark, the credits end, and the film can begin.

What do we see, even before Lost Highway begins to narrate this or to show that; what do we see in the unbridled dromoscopy of this almost abstract credit sequence? Every time I watch these hypnotic imageless images I tell myself: it is as if, in all the road movies in the history of cinema – from Clouzot's The Wages of Fear (1953), through Dennis Hopper's legendary Easy Rider (1969) and Spielberg's Duel (1971), to John Hillcoat's The Road (2009) – all the characters and their lives, the landscapes, adventures, endings and beginnings, the surprises or plot twists at different moments in the film, as if all these were removed to leave them with … with what? Perhaps the simple shape of a moving frame capable of producing the purely cinematic figure of the road. In short, the archi-screenplay of the Blickbahn.

In The Evidence of Film, Nancy describes the mechanics of cinema as follows:

> The onlooker is fastened to a place in a dark hall, and it would be wrong to say that the filmic image is there in it (in the way another kind of image could be in there) since this image actually constitutes a whole side of the hall. Thus the hall itself becomes a looking site or device, a looking box – or rather: a box that is or acts as an aperture or peephole made for looking, like an opening in a pipe system or machine that is meant to allow observations and inspections (called a "regard" in French). Here the look enters a space; it is a penetration before it is a consideration or a contemplation. (Nancy 2001: 14)

The filmic gaze enters, penetrates, opens up, cuts into, in the manner of a surgical operation which, as early as Benjamin, constituted the paradigm of camera movement.[2] It is no doubt because of its endoscopic nature that cinema, as Nancy also writes, is "much more than the invention of a supernumerary art": it is "the force of a schema of experience."

This force is that of a movement which does not cross spaces that are already established and distributed, since it rather constitutes those spaces: "The movement carries me elsewhere, but this 'elsewhere' is not a priori given: it is my coming which makes it into the 'there' I will have come to from 'here'" (Nancy 2001: 29).
A cinematics of this nature that is primarily concerned with seeing, which arranges and structures what it traverses in the very act of this traversal, is cinema as a "pathway of the look," or Blickbahn. It is the opening trace of a "pre-perspective," which makes cinematographic experience possible, and which means there is such a thing as the "cineworld" of which Nancy speaks:

> … the cineworld is a world, our world, whose experience is schematised – in the Kantian sense, that is, made possible in the way it is configured – by cinema. This does not mean that our world would only respond to this schematism, but that it is included as one of its conditions of possibility. When we look at the countryside from a train, a plane, or a car, or indeed when, in a certain movement of the look towards an object, we suddenly fix our gaze on this object, or the detail of a face, or even an insect, when we discover the view from a street, when we appreciate a remarkable, strange, surprising or unsettling situation, but also when we are drinking a cup of coffee or walking downstairs, all of these are so many occasions we are inclined to imagine or describe as "cinematic." (Nancy 2004)[3].

The car that is mentioned here, then, is not only one example among others, one among many situations which produces a "cinematisation" of life. The car, or rather the road movie, is the re-inscription of the condition of possibility of cinematographic experience in the cineworld itself: it is the fold or re-mark (which we might call quasi-transcendental, in Derrida's sense of the term) of cinema.[4] "Thus

the car that rides (rolls [roule]),” writes Nancy in The Evidence of Film, “is also a cinematic truth in two ways: first, as a box that looks; second as incessant motion’ (2001: 29). So the road movie is not one cinematic genre among others, but the genre which confronts cinema as such. Without formulating it explicitly in these terms, this is what Nancy says over and over again about Kiarostami’s films: he describes how “a car moves, the lens moves within it and outside: here is a film whose subject travels as its film stock does” (2001: 10); he emphasizes how often the director shows the “window of a car,” a “shot in a rearview mirror” (2001: 16), he notes all the “car windows […] which open the film (and lead to it) (2001: 14); he talks about the “lens that becomes a car” (2001: 30), about the “tireless picturing of cars, car windows, windshields, and rearview mirrors that act as capturing agents of various views” (2001: 38) or as “image catchers” (2001: 50). In short, as he puts it in talking about Et la vie continue (1992), “the automobile […] is the central object and subject of the film, its character and its obscure box, its reference and its motor” (2001: 66).

The car appears therefore as the clutch of the film – of every film in which it appears – in terms of the road schema, or in terms of the routing that directs and regulates cinematic experience as such (2001: 52; my emphasis):

Driving cars takes on a great importance: turning the steering wheel on these zigzagging roads, changing gears, braking. With a sort of clutching mechanism the film works together with these kinetics, and the driver’s attention is required.

This is why the Blickbahn, this trace or tracing of a view, is endlessly translated and retranslated in what we might call the archi-road movie, or the architrace of the cinematic gaze opening up the pre perspective of the cineworld (2001: 66):

It’s a register of permanent clearing [frayage]: incessantly, one has to find, one has to reopen the road […]. The automobile carries around the screen or the lens, the screen-lens of its windshield, always further, and this screen is precisely not a screen – neither obstacle nor wall of projection – but a text [écrit], a sinuous, steep and dusty trace.

Ultimately, what Nancy is asking us to think when he analyzes “the gaze as carrying forward” (2001: 66) is nothing less than filmic “ipseity” as a relationship to itself that differs, and is deferred, in and through this clearing movement of the image [le frayage imageant]:

“(de-) monstration that there will never have been a self (soi) fixed in a position of spectator, since the spectator is never anything but the acute and tenuous point of a forward movement (avancée) that precedes itself indefinitely” (2001: 66–8). This is the film that therefore I am.

The dromoscopy of the credit sequence of Lost Highway is literally prefigured in Lynch’s Blue Velvet (1986), in the frantic chase Jeffrey Beaumont (Kyle MacLachlan) is caught up with Frank Booth as the driver (played by Dennis Hopper, who seems to embody the memory of Easy Rider). Mulholland Drive (2000) shifts rhythms, going from extreme speed to an almost dizzying slowness, and opens out onto a vision of an automobile which glides in slow motion between the lanes of the road that snakes its way through the hills of Los Angeles, before being hit violently by a speeding vehicle. Lynch’s cinema oscillates between the extremes of wild escapades (Wild at Heart, 1990) and of slow road trips (in A Straight Story (1990) we have the unforgettable odyssey of a lawnmower making its way across the USA). As Lynch himself suggests, all of this imagery of highways and locomotion, all of these figures of the road, are quite simply images of film itself: “A road,” he says, it is of course “a journey into the unknown,” but “it is also the definition of

cinema – the lights go out, the curtain opens, and you're off, without knowing where you are going …" (Lynch and Rodley 2005: 203).

As soon as one pays closer attention to it, countless variations on this "cineroad" schema become apparent in the history of cinema.

In Christine (1983), John Carpenter not only shows the yellow broken line of the night road on which Buddy (William Ostrander) is running away to escape from the murderous Plymouth of Arnie (Keith Gordon). Every time we have a shot of Christine herself, every time we are face to face with the haunted automobile, staring it right in the eye, so to speak, it is also as if the film was trying to achieve the "absolute reverse-shot":[5] what we see is a dark enclosed space behind the dazzling headlights; what sees us, is a "box that looks,"as Nancy puts it, surrounded by blinding spotlights.

In Deathproof (2007), Quentin Tarantino has one of his characters, Stuntman Mike (Kurt Russell), utter these words, that are like an algebraic formula for cinema considered as an optical archi-road trace [architrace optoroutière]: "This is a movie car," the psychopathic stuntman declares when he shows his car to the young Pam (Rose McGowan), who as yet suspects nothing; "sometimes, when you're shooting a crash, the director wants to put the camera in the car." The young girl then gets into the Plexiglas "box that looks," and ends up crushed against its side. Here, as in David Cronenberg's Crash (1996), the death drive goes – or travels – alongside the sex drive, the one shifting gear to the drive of the other. But what Deathproof also, and above all, draws a parallel between is the winding forward of the film itself, and the forward movement along the road: the film, scratched in places (Tarantino is playing with the conventions of poor projection in grindhouse cinema halls), is bisected vertically by a jumpy, broken line that becomes the precise visual counterpart of the yellow tracks on the tarmac.

Deathproof is a true cinephile's road movie, shot through with explicit or fleeting allusions to so many other films, opening up countless forks and crossroads in the history of the genre. So for example, while Julia (Sydney Tamiia Poitier) is sending a love text, we hear the music of Blow Out, the fascinating exploration of a road accident orchestrated by Brian de Palma in 1981 (Szendy 2006). Or again, at the end of the second part, we recognize, in the 1970 white Dodge Challenger discovered by the three girls, the same car Kowalski drives in Richard Sarafian's Vanishing Point (1971). We then find ourselves superimposing, on to the images of the road in Deathproof, the unforgettable sequences of this classic road movie (that Tarantino's characters quote over and over again: Stuntman Mike talks about the good old "Vanishing Point days," and one of the three girls is annoyed when the stuntwoman insists on driving "some fucking Vanishing Point car"). Vanishing Point is in effect a catalog of roads, of tracks, of crossings, of road signs. A thousand road motifs, and countless sequences, and I remember in particular the one in which Kowalski, approaching the Nevada border chased by two police cars with their sirens blaring, narrowly misses two highway trucks painting white lane markings on the tarmac: the vehicles painting these lines at that point go off to the side and come to a stop on the hard shoulder – the pathway deviates.

So we find ourselves wanting to watch again all of cinema history from the perspective of the Blickbahn.[6] From the very first sequence of Visconti's Ossessione (1943), neorealism begins to trace its own pathway by showing a road filmed from the cabin of a covered truck. A few decades later, in the post-apocalyptic genre, and against a backdrop of superimposed black-and-white images, we hear a voice-over at the beginning of Mad Max 2 (1981) solemnly announce: "on the roads it was a white-line nightmare, only those mobile enough […] would survive." What is at stake in this "optoroad" movement is indeed the life, or survival, of film in general: its condition of

possibility – which it makes visible, and which makes it visible [qu'il donne à voir, qui le donne à voir].

Ever since film has had sound too, cinema has often appeared as a sort of "remake" of the lived experience that Michel Chion has described so well in Le Promeneur écoutant (1993). In the second chapter, "On the Road," he describes himself as a "sound chronicler" crossing the USA by car. He puts on music, that then accompanies him as the landscapes he is going across roll by. He talks about "the film-music effect," a phenomenon well known to audiophiles, when for example "as we are driving along we project Bach's music on
to the wild panoramas of the coast …" (1993: 43). The soundtrack effect seeps into the locations that follow one after another, and it assembles them as in a film – without any actual film or camera – that winds forward as the car winds its way across country.

What implications does this have, in what I am calling the "archiroad movie," for the audiovisual montage, as the simultaneous movement of traveling on the highway and of amplified recorded music? Should we have the concept, alongside that of Blickbahn, of what one might term Hörbahn, a parallel path for sound? Are we, though, dealing with something that runs in parallel on these tracks or pathways that are already carrying us into the cineworld?

Let us get back on the road and listen attentively.
In Vanishing Point, it is a blind DJ, Super Soul (Cleavon Little), who accompanies with his words, and escorts with his music, Kowalski's crazy drive across the USA. He is the one who, by pirating the frequency of the police radios, seems almost to guide the reckless driver with the daily show he broadcasts over the airwaves, by means of a kind of long-distance radio-piloting mechanism that harks back to the one used by Fritz Lang at the end of The Testament of Doctor Mabuse (1933). In that film, too, there is a frantic car chase: the escaping car of Baum (Oskar Beregi) hurtles forward between the trees lining the road, as if it were being driven via remote-control by the voice and ghostly silhouette of Mabuse (Rudolf Klein-Rogge); and the car of the police superintendent Lohmann (Otto Wernicke) chases the mad psychiatrist with the help of his driver, Kent (Gustav Diesel).[7]

In these scenes, as in the credits of Lost Highway, the lines dividing the two lanes on the tarmac (Two-Lane Blacktop is also the title of Monte Hellman's fine 1971 road movie), i.e. the bisecting marks on the road, could suggest the mechanics of the audiovisual as such. The double band or track is in fact one possible figure of how sound is inscribed in cinema: a reel of film upon which the soundtrack runs alongside the image frames, a little like a hard shoulder, like a verge that borders the images as they drive along, that hems the general movement whereby the look heads forward into the unknown.[8]

Is this the archival "archifilm" of the audiovisual? Would this be the quasi-transcendental re-mark, on screen and in split screen, that would allow us to hear-see the two parallel pathways of the cineworld – seeing on one side – hearing on the other – separated by the blinking trace of the – intermittent – yellow line – that divides – as it brings them together – the two tracks – or bands?

The parallelism is misleading. It is almost as naive as the gentle and pretty personification of the sound track we see in one of the scenes in Walt Disney's first Fantasia. We cannot get an audiovisual schema of cinema by adding two tracks together, side by side, running next to each other in a synchronous pathway. To stay within the register of cartoons, we should perhaps conceive of the experience of cinematic hearing-seeing instead, with Tex Avery, as an exit, as a swerve whereby we leave the "optoroad" of film stills and go towards the

soundtrack that borders them.

The poor wolf! In an episode from 1943 entitled Dumb-Hounded, he does everything he can to escape from Droopy (who appears for the first time on screen in this film). He becomes a kind of cartoon Kowalski, making his way at high speed around the whole world, but each time he is caught by the police dog. When he escapes from his igloo in the North Pole, crosses the USA like an arrow, and ends up running desperately down a New York street, he is left with only one final solution to shake off the bloodhound who has been hunting him down: get out of the film. So he leaves the image and, as he slips and slides in the space outside the frame that is the field of the soundtrack, we hear what sounds like the screech of tires.

In The Testament of Doctor Mabuse, too, when the two cars, which hurtle after one another in a frantic chase, cross a railway line at the precise moment when the level crossing barrier comes down, we see a traffic sign that says: Achtung! Bahnübergang (literally: "Attention! Crossing Tracks"). It is as if the articulation of the Blickbahn and the Hörbahn can only take place as a kind of road accident, or the collision and the crash that they threaten to produce. While the superimposed ghost of Mabuse points to the road that Baum has to follow while he is at the steering wheel, the camera keeps showing the verge, suggesting the imminent swerve that will cause the car to leave its track. On all of these tracks and roads, between the slip roads and the intersections, there is thus the specter or the fantasy of a collision. This would be the limit-point, the properly cinematic point of connection where each zone of the senses reaches or touches, in extremis, its edge. Sensing, as Nancy writes:

> consists always in sensing at the same time that there is some other (which one senses) and that there are other zones of sensing, overlooked by the zone that is sensing at this moment, or else on which this zone touches on all sides but only at the limit where it ceases being the zone that it is. Each sensing touches on the rest of sensing as that which it cannot sense. Sight does not see sound and does not hear it, even though it is in itself, or right at itself that it touches on this nonseeing and is touched by it …[9]

Let us translate these lines into the language of the "optoroad" and "otoroad" schema: the Blickbahn not only opens up the pre perspective of what can subsequently become image, but it canonly clear the way for seeing if it at the same time also ceaselessly touches upon, or even crashes into, what is audible, In an entirely different context, Derrida stressed that "there is no pure pathbreaking [frayage] without difference" (2001: 252; translation slightly modified) – that is, for our present concerns, without difference of the senses. This difference, however, does not precede any tracing of the road, since there is no seeing or hearing, in their stable generality, before they are (re)distributed, one against the other, absolutely against the other, to the rhythm of the bumps and jolts that accompany the breakthrough into the cineworld.

Nancy begins with the hypothesis, in The Muses, that "the distribution or distributions of the senses […] would themselves be the product of art" (1994: 10), and does not hesitate to then assert:

> Each work of art is in its own way a synaesthesia, and the opening of a world, insofar as "the world" as such, in its being world […] is a plurality of worlds. (1994: 22; my emphasis, translation modified)

Each time unique, then, the routing of the senses into the cineworlds.

This is why we should not be hasty in following those who announce an "auditory turn," or "'acoustic turn," in the humanities, in contemporary theory, or contemporary thought. It is, of course, undeniable that we have witnessed a renewed interest for sound

and listening, of which certain pages by Nancy, by myself, and by others, have been a part.[10] We cannot, however, think or grasp these turns that deviate, that cause the visible to swerve towards the audible (or inversely) from high, as if from a bird's-eye perspective. If there is a "turning," it is only to be found in the quasi-transcendental where the "optoroad" and "otoroad" schema fold back upon themselves at the turn that is produced, singularly, here and now.

This is how we need to understand Nancy, I believe, when he speaks about "trans-immanence" ("the transcendence of an immanence that does not go beyond itself in transcending") and when he follows Adorno, according to whom "aesthetics presupposes absolutely the immersion within a particular work of art" (Nancy 1994: 35).[11]

Each time unique, yes, the routing of the senses.

Notes

1.Martin Heidegger (1983: 125): "Die Blickbahn des Anblicks muss im voraus schon gebahnt sein. Wir nennen sie die Vor-blickbahn, die 'Perspektive'" [Our viewpoint's line of sight must already be laid out in advance. We call this prior line of sight "perspective" (Heidegger 2000: 124)].

2. Cf. Walter Benjamin, The Work of Art in the Age of Mechanical Reproduction (final 1939 version). My translation: "Between an artist and a cameraman we find the same relation as that between a magician and a surgeon. The artist observes, in painting, a natural distance between a given reality and himself; the cameraman penetrates deeply into the very fabric of the given*." Benjamin then adds in a footnote: "*The risks a cameraman takes are comparable to those of a surgeon" (who, we read a few lines earlier, "does not stand directly in front of the patient […]; rather he penetrates into him, operatively").

3. In the same text, Nancy goes as far as to say that cinema is nothing less than an "existential" in Heidegger's sense of the term: "a condition of possibility of existing."

4. Of the many texts in which Derrida talks of the quasi-transcendental, we will simply cite the following passage from Resistances of Psychoanalysis (1998: 79): "[…] a quasi-transcendental law of seriality that could be illustrated […] each time that the transcendental condition of a series is also, paradoxically, a part of that series."

5. Chion (1982: 46) talks about the "illusion of the absolute reverseshot: such that the characters in a film could see us as we see them …" In other words: such that the camera, adopting the subjective point of view of a character, turns back in a sense upon itself and, passing through itself, turns towards us who are watching the film.

6. If it is true that in 1895 the Lumière brothers' locomotive inaugurated cinema in hurtling towards or swooping down upon the terrified spectators in Arrival of a Train at La Ciotat, then one could say that film has being haunted since its very beginnings by rails, tracks, and trails of all kinds.

7. It is surprising that Hitchcock, in his important and fascinating interview on the chase scene as a paradigm of cinema, says nothing about the role of the soundtrack. ("Core of the Movie – The Chase," which first appeared in the New York Times Magazine on October 29, 1950, was subsequently republished in Hitchcock (1997: 125 ff.)

8. One would of course need to take into account here the technological history of cinema, with the different processes of synchronizing sound and images that have punctuated this history, particularly the adoption of the optical track running along the reel of film (the so-called "sound-on-film" process developed by Tri-Ergon and Tobis-Klangfilm at the start of the 1930s). But just as a page remains a single unit, even a determining concept for scrolling down successive screens of a computer, so the figure of the "band" or "track" continues to structure representations of sound in the context of film. In exactly the same way, the word "film" itself is still used, even in the digital age, to designate an audiovisual work via a metonymy that belongs to a previous age.

9. "Why Are There Several Arts, and Not Just One?" in Nancy (1994: 17).

10. See in particular Szendy (2001), Nancy (2007), and Sterne (2003). Don Idhe ([1976] 2007) was the first to claim an "auditory turn" in the phenomenological tradition. The expression has, however, been resurfacing over the last ten years or so. See, for example, Yablon (2007: 3; in which we read: "recent literary, cultural and historical studies

take what might be called an 'aural turn'"), Meyer (2008), and Janus (2011).

11. Nancy is quoting from Adorno's Aesthetic Theory.

The Propagation of Sound in Space. A Point of View
- Alvin Lucier

From **Tacet # 3: Form Sound Space**, Les Presses du Réel, 2014, pp.31-45

Abstract *Western musical tradition is historically linked to a two-dimensional representation of sound. But music is a matter made of waves that propagate and are reflected in a given space, which is never neutral. In this 1979 text, American composer Alvin Lucier describes some of his early works and how they develop a careful musical thought, attentive to the acoustic and spatial characteristics of sounds. This pioneering and resolutely experimental work dealing with the third dimension of sound later influenced generations of musicians.*

For several hundred years Western music has been based on composition and performance. Most attention has been focused on the conception and generation of sound, very little on its propagation. Written notes are two-dimensional symbols of a three-dimensional phenomenon. No matter how complex a system of notation or how real the illusion of depth, written music is trapped on a flat plane. Even music's from oral tradition are rooted in performance notes and instrumental topologies or rely on texts, stories, or social hierarchies. We have been so concerned with language that we have forgotten how sound flows through space and occupies it.

Sounds have specific spatial characteristics. Those of short wave length (high frequencies) are directional; longer ones (lows) spread out. Sound waves flow away from their sources roughly in three dimensional concentric spheres, the nodes and antinodes of which, under certain circumstances, can be perceived in a room as clearly as those of a vibrating string on a violin. Each space, furthermore, has its own personality that tends to modify, position, and move sounds by means of absorptions, reflexions, attenuations, and other structurally related phenomena. Conventional acoustic engineering practice has historically defied these phenomena in an attempt to deliver the same product to everybody in the same space. Accepted as natural occurrences to be enjoyed and used, however, they open up a whole new filed of musical composition. For the past several years I have conceived a series of work that explore the natural properties of sound and the acoustic characteristics of architectural spaces as musical objectives.

I was not composing music in 1965 and I had lost confidence in the musics of my education. Post-Webern serialism, particularly as I had witnessed it earlier in Darmstadt, seemed florid and complex enough to be obsolete, and the tape music of that period seemed to be only an extension of that language. I felt the need for a new idea. When the physicist Edmond Dewan offered his brain wave equipment with which to explore the possibility of making music, I had a ready an open mind. As I started learning to generate alpha to make sound, I began experiencing a sensibility to ideas of tension, contrast, conflict, and other notions of drama. To release alpha, one has to attain a quasi meditative state while at the same time monitoring its flow. One has to give up control to get it. In making Music for a solo performer (1965), I had to learn to give up performing to make the performance happening. By allowing

alpha to flow naturally from mind to space without intermediate processing, it was possible to create a music without compositional manipulation or purposeful performance.

In the spring of 1968, when Pauline Oliveros invited me to California, I began picking up images for a new work. The ocean suggested seashells, and a nearby canyon offered itself as a large resonant environment in which they could be sounded. I designed a performance of a new work, Chambers, in which several shell players, starting from a small circle, spread out through the La Jolla landscape, describing the outdoor space in terms of their sounding shells. Later I expanded the idea to include any small or large resonant chambers that could be made to sound. I thought if them as rooms within rooms, which impinge their acoustic characteristics upon each other.

I then made several works that articulated spaces in more specific ways, Vespers (1968), based on the principle of echolocation, uses pulsed sounds, as those used in acoustic testing, to make acoustic signatures of enclosed spaces. As reverberation times are measured, the quality of the surrounding environment is described by comparing the timbre of the outgoing pulses with those that return as echoes. Time and space are directly related; durations are proportional to distances between sound sources and reflective surfaces. In "I am sitting in a room" (1969), several paragraphs of human speech are used to expose sets of resonant frequencies implied by the architectural dimensions of various sized rooms. By means of a pair of tape recorders, the sound materials are recycled through a room to amplify by repetition those frequencies common to both the original recording and those implied by the room. As the repetitive process continues and segments accumulate, the resonant frequencies are reinforced, the others gradually eliminated. The space acts as a filter. We discover that each room has its own set of resonant frequencies in the same way that musical sounds have overtones. And in Quasimodo the Great Lover (1970) sounds sent over very long distances, by means of relays of microphone-amplifier-loudspeaker systems if necessary, capture and carry the acoustic characteristics of the spaces though which they travel. Total distance is determined by the amount of space necessary to modify the original material to a point of unrecognizability.

Recent works have been more concerned with the properties of sound itself rather than with how it acts in space. Still and Moving Lines of Silence in Families of Hyperbolas (1973-74) is an exploration of standing waves and related phenomena. If a pure wave emanates from two sources, or one source and a reflective wall, standing waves will form in symmetrical hyperbolic curves equidistant and on either side of an imaginary axis between the sources. If two closely tuned waves emanate from two different sources, beating patterns will cause the crests and troughs of sound to spin in elliptical patterns toward the lower-frequency source. Changes in intonation will cause changes in speed of beating and, if unison nulls are crossed, direction of movement. In this work, dancers search for and move in troughs of audible beats, which move out to listeners as ripples on a pond, and players of electronic and acoustic instruments spin crests of sounds in polyrhythmic figures through space.

In Outlines of Persons and Things (1975), sound waves are used to create diffractive patterns around opaque objects, producing silhouettes which may be perceived directly with one's ears, or through loudspeakers which shift, enlarge, and amplify the images. If either the object or the listener moves, slight phase changes will cause perceptible variations in the resulting fields. If the illuminating sounds consist of two or more closely tuned frequencies, temporary speedups and slowdowns of the rhythmic patterns will occur.

Often it is necessary to provide visual clues as to the overall sound situation. You may

be sitting in the trough of a standing wave or on the edge of a sound shadow, but since you cannot be everywhere at once, you hear only what is available to your location in space. Your focus is oblique. In Directions of Sounds from the Bridge (1978), for example, sound sensitive lights are stationed around an oscillator-driven cello to sample the changing volume shapes caused by the directional characteristics of the instrument. Stringed instruments cast sound shadows around themselves in shapes determined by their resonant characteristics. In small spaces or in situations where amplification is possible, the shapes that flow from the tops, bottoms, and sides of instruments are apparent to listeners. And in Bird and Person Dying (1975), a work in which phantom images seem to appear in various places in space because of the apparent locative properties of acoustic heterodyning a performer, wearing miniature microphones in his or her ears dips, turns, and tilts his or her head, altering pitches of strands of feedback created between the microphones and pairs of loudspeakers. In this work, as in several others, performing is more a matter of careful listening that of making sounds happen.

I often dream of performance spaces specially designed for works based on the three-dimensional characteristics of sound. Paraboloids, spheriods, and other similarly shaped rooms with movable walls could be constructed to position, move, and modulate sounds. Walls, floors, and ceilings could be thought of as acoustic lenses whose focal points are determined by reflective time. It is also possible to create imaginary spaces by means of computer simulation. In RMSIM I (1972), a digital computer drives a configuration of analog modules into which is fed a live microphone placed in an enclosed space. Changing values of resonant filters, amplifiers, and reverberation units suggests changes in the size and structure of simulated rooms. And in Clocker (1978) a galvanic skin-response detector controls the speed of a ticking clock at several separate time delays, creating reflected sound from appropriately positioned loudspeakers so as to suggest changes in size and shape of memory-triggered rooms. Given enough delay lines and loudspeakers, any real or imagined rooms may be simulated.

I am now working on a series of Solar Sound Systems for public places. Solar panels of various types, sizes, configuration, and energy collecting capabilities are deployed at on-site locations, facing various compass directions relative to apparent daily sunrise and sunset. As sunlight falls on the panels at different intensities at different times of the day and year in various weather conditions, varying amounts of voltage are collected which drive packages of electronic music modules, amplifiers, and loudspeakers, creating a continually changing music. Nearby trees and shrubbery, corner of adjacent buildings, passing people and cars may cast shadows or absorb enough sunlight to bring about further changes in the music.

Each installation will be unique. The number and size of the panels will be determined by the complexity of the sound system and the size of the installation. In most cases, the basic sound source will be a pulse wave, chosen for its low power consumption – for example, it may be on duty only ten percent of a given cycle. Filters will be used for timbre control. All systems, however, will be completely solar powered. The generation, propagation, and quality of the music will be determined by the intensity of the sun's rays at any given moment in time.

The Box Gets in Your Head

- Arthur Stidfole

From **Tacet # 3: Form Sound Space**, Les Presses du Réel, 2014, pp.229-253

Arthur Stidfole had a twenty-year career in the arts from the early 1970s into the early 1990s, as a bassoonist, composer, teacher, producer, administrator, fundraiser and sound engineer, mostly in New York, where he collaborated artistically and technically with prominent new music figures, such as Phill Niblock, Lois V. Virek, La Monte Young, David Berhman, Pauline Oliveros, Jon Gibson, Ben Johnston. In the 1990s, he withdrew from the music world to pursue studies in nursing, and earned a degree from Syracuse University. While practicing as a Neuroscience Intensive Care Nurse for 16 years in Detroit, Philadelphia, San Francisco and New Mexico, Stidfole remained intermittently active in the arts world, participating in various art projects and being involved as a memeber of the Experimental Intermedia Foundation's Board of Directors.

Abstract *We hear music and sound art in acoustic spaces. The spaces themselves, and how they are used by artists, profoundly influence the audience experience. Research into the neurology of hearing and comprehension is beginning to provide insight into how the brain seeks clarity from the environment. Providing greater clarity is a tool for enabling enhanced aesthetic experience for listeners.*

In the mid-1960s Pierre Boulez brought the Cleveland Orchestra to my hometown, a not-very-big city in the middle of New York State, USA. The only space on the local college campus that seemed to be able to hold both a large symphony orchestra and an audience was the gymnasium. The climax of the program was Stravinsky's Le Sacre du Printemps.

The Cleveland Orchestra is an ensemble that can put out a glorious magnitude of coherent sound even in the dullest of halls. But in that all-wood gymnasium, there erupted such a mass of cacophonous reverberations that I think much of the audience believed hell was rising through the floor. Many of them fled in terror.

In the gymnasium, the piece, and the Orchestra's coherence collapsed under the inappropriately overwhelming reverberations of the room. At the end of the performance, with only part of the audience remaining, my father – who in no way was a musician – turned to me and said, "Wow! Bang, bang! We should get out before the building collapses!" At that performance I realized for the first time that bad acoustics could ruin a great performance.

In the late 1970s, one New Year's Eve, I went with an unlikely collection of friends to a downtown New York City performance space to "hear" a punk band. There the gain was so high it was impossible to make out any details of the performed music. The room was concrete, mostly, and contributed no shape to the sound I could perceive. It all had the character of a one-dimensional experience: excessive loudness. Once the ears, mind, and body more or less accepted the volume, it seemed that the audience settled into a sound and drug-induced stupor: I think we were all seeking something that was not there.

Recently, in a tiny old New Mexico mining town-turned artist haven, a five-piece jazz ensemble played in a wonderful old saloon, which is a nice wooden rectangle that can sound quite lovely when the space is played well. The sax, the trumpet and the drums totally overpowered the sonic capacity of the room, to the point that every chart mushed into the same place, losing all timbral nuance of character. The keyboard and string base could only be heard during their solos. Here was a band cut off from its own experience of the room. The audience response was a lackluster compared to previous outings by the principal members of the group in less sensitive spaces.

In a different extreme, a famous classical guitarist frequently chooses to play large performance venues utilizing no electric support whatsoever. These dismal events create an experience not unlike a lover whispering just below one's ability to hear, leaving one frustrated as to what the message might be.

Then there are the myriad acoustical ugly lecture halls around the world, in which students routinely doze off, no matter how gripping the professor. All of these examples have the same problem: the clarity of the acoustic message is insufficient.

The examples above are just a tiny segment of the poor acoustics and poor use of acoustics by musicians, speakers, and sound artists. I say here that humans struggle for clarity in their auditory experiences. Neuroscience research indicates that auditory attention, as created by the brain, has considerable influence on what we hear. The brain actively tries to filter our non-useful information in order to perceive what it thinks the message is. Interestingly, musicians are more effective at this process than non-musicians. (Kraus, 2013: Gittelman et al., 2013) This is part of a very active neural relationship between the auditory nerve, the brainstem, and the cerebral cortex. (Bidelman, 2013) Believing that one knows what to expect, based on experience, contributes to a person's interpretation of auditory environments. (Omigie, et al., 2012; Bidelman, 2013; Mussachia et al., 2007) Clarity in audio presentation has profound effects on cognition. Improving on clarity enhances communication even among impaired individuals with pathologies such as autism. (Kraus, 2012) Neurological responses in the brain create attention, playing an active role in determining what we hear at any moment. (Gittelman et al., 2013; Kraus, 2013)

A constant set of messages is exchanged among the first neural way station in the brainstem (inferior colliculus), the auditory nerve, and various places in the cerebral cortex. (Bidelman, 2013) The brain will seek the auditory information it perceives is important, and using its electrochemical resources, amplify that information at various stages of the neuro-auditory pathway in an attempt to obtain clarity. (Gittelman et al., 2013)

Some research indicates that the brain responds with stronger internal signal to "consonant" pitch intervals than dissonant sounds. (Gittelman et al., 2013) Without disagreeing that this is true, I have to say that my experience has shown that what is "consonant" to an individual is highly variable depending on cultural background experience. Historically, centuries-long arguments have taken place over this issue. (Duffin, 2009)

In a noisy room, musicians are more skilled than the general public at filtering out the noise, and amplifying the acoustic signal of the speech they want to hear. This is a plastic capability, meaning that this filtering can be improved with practice, even by non-musicians. (Kraus, 2012)

My experiences are individual but the following listening examples are not only on my own; they belong to many people who have experienced these phenomena.

Kilbourn Hall, a 450-seat wooden recital hall of seemingly infinite flexibility is a remarkable acoustic treasure of the Eastman School of Music in the USA. Jay Vosk, a delightful saxophonist and composer, once described Kilbourn to me as "so sensitive it starts sounding as soon as you think about playing". This is an acoustic space in which acoustic "presence" enables audiences to feel inside the music. For me, playing there was exhilarating, but also terrifying, because the acoustics made me stand naked: every nuance or hesitation spoke to the farthest corners of the room.

Is the Artist a Slave to Room Acoustics?

In 1972, the University of Illinois had completed a new School of Music building just as I started graduate school there. The building was architecturally in keeping with 1972–forgettable–, and acoustically as uninteresting as possible. But I had gone there to study with the composer Salvatore Martirano who was building a huge digital electronic musical instrument, the "Sal-Mar Construction." This was "the first musical instrument to generate dynamic improvisatory electronic music using analog and digital circuits designed with help from engineers who worked on the University of Illinois' early Illiac supercomputer. The information output [was] converted from digital to analog form and [was] routed to oscillators, filters and amplifiers, whose output [was] sent to one or more of 24 speakers." (Cuelho, 2011: 33-34) In other words, it was a real-time composition instrument, and Salvatore Martirano was its virtuoso.

This more than 2 meter-tall white and silver thing sat in the middle of Martirano's studio, an acoustically dead space maybe 6 square meter as I recall. [figure 1] The ceilings were not particularly tall. But the Sal-Mar played through the 24 poly-planar speakers–thin Styrofoam speakers about 30 cm wide and 60 cm tall–hanging from the ceiling. On the instrument itself, there were 291 touch switches and Martirano would control the logic of the instrument by putting a wired finger on a touch-switch while and simultaneously touching a bar that went the width of the front; the musician became part of the electronic circuit. There is not space here to discuss the instrument in detail, but by touching one of the 291 switches, Martirano would add a bit of digital logic in a micro- or macrocosmic way to the unfolding musical texture. Movement of the music in space among the 24 speakers was one parameter of the real-time compositional capability of the instrument.

Listening to Martirano play the Sal-Mar became more of an education than my individual composition lessons with him. Sitting among the speakers removed the dullness of the acoustic space. The sounds lived in the air without a single, overall focal point. The music could descend into a blurry mash and emerge unexpectedly into a pristine clarity. It was a marvellous thing to hear at any moment, but over time it became a nearly spiritual transformation of space through technology and art.

The Sal-Mar Construction stands as a monument to what could have been possible in digital electronic musical instruments. But its size, complexity and expense gave way to smaller, less intensely capable commercial instruments and workstations.

David Tudor spent years delivering "Rain Forest" in a variety of spaces and with a variety of technical realizations. Simply put, many objects are hung and positioned in a space, each one excited by a transducer. Audio speakers may collect the output of the objects. Listeners wander the space, taking in the individual fascinating output of objects, while surrounded by the aggregate sound of it all.

Here, again, by establishing multiple points of individual clarity, a room is transformed

into the intimate experience of each individual space the listener can occupy. The totality of the room is multiply subdivided. Clarity is perceived wherever one is at the moment.

Phil Niblock might provide neurologists and-acousticians with many decades of research. This filmmaker and composer has created a musical vocabulary that should leave audiences utterly confused and incoherent: layers and layers of microtonally tuned long tones from an instrument, or instruments, that create monumentally dense textures. Each musical piece tends to last 20 to 30 minutes.

Niblock's music requires listening, not simply hearing. His microtonal layering creates a unique harmonic spectrum that resonates the acoustic space. With a good sound system and an adequate acoustic space, a person can walk around and hear very clear rhythms, melodies, choruses and a musical "whirling" in the upper harmonics of the sound that is as uplifting as anything in Western musical culture, without using any of its conversations. But I would emphasize that it requires a good system, good acoustics, and a concentrating listener to achieve maximum effect, through maximum clarity.

So What Is Research to Make of this Clarity?

Certainly, I have experienced the music in multiple presentations as a listener and as a performer for almost 40 years. I could say that I have "acquired a taste for it". But I have also played Niblock's recordings for completely naïve audiences since the mid-1970s and had many people respond deeply and affirmatively from the very beginning of the sound. One message from this is that sonic clarity, while necessary, cannot be narrowly defined.

In the late 1970s, I heard Rhys Chatman's carefully tuned electric guitars at high volume. The overtones of the amplified instruments, in a very different way from Niblock, excited the acoustics of the room, focusing hearing attention in the octaves above the fundamentals and achieved a grand beauty I had previously not expected from these "rock" devices.

In the mid-1980s I had the privilege to be the Administrative Director of La Monte Young's Harrison Street "Dream House" Project in New York. This was in a wonderful old building in Tribeca, purchased by Dia Art Foundation to house the work of Young, visual artist Marian Zazeela, and also host Pandit Pran Nath from time to time. In this building La Monte Young and sound engineer and artist Robert Bielecki had taken the second story, which had several rooms opening onto a central hallway/stairwell, and put just-tuned – whole-number intervals – diads – as I recall – playing through speakers in each room. At least some of the diads were very narrow intervals. In the center, all the different diads from all the rooms came together in an auditory waterfall, shimmering in a bright daylight. The effect created a deep, joyful tension that urged one to move out of its grip. As one moved in the hallway, the musical sound would shift. As one approached the doorway of a room, it seemed that a resolution was ahead, and indeed, once one entered a room so that the other rooms' tones were not an influence, each room's justly tuned diad brought a profound sense of peace and release. This dissonant, but were not dissonant at all in this realization. Each room's individual diad was a different sonic and emotional experience.

The rooms were hard surfaces so there was plenty of reverberation. The sound system volumes were not overwhelming, unlike other La Monte Young projects. In this collection of sound spaces, I gained a sense of why it may have been possible in the past ages for music to sway people to the depths of their beings, perhaps even change their lives. Certainly for me, La Monte Young's amazing musical ear, and Robert Bielecki's thorough control of

electro-acoustics excited the rooms subtly to near ecstasy. I loved being in that area of the building, and spent a lot of time moving carefully about these tones.

Why Was this so Moving?

Much, but not enough, has been written about the compromises of equal temperament (ET). I would argue that ET has led to a diminution of active listening, since the subtleties of varied interval sizes has been forsaken for a generally "out-of-tune" 12-step chromaticism. In such a musical society, how can musicians, much less audiences, have any comprehension of the vicious arguments during the 17th and 18th centuries about "commas" and the varying energies of "keys" before the general adoption of ET? What a different listening environment then! (Duffin, 2007: 46-63)

La Monte Young's tunings relied on musical intervals based on "whole number fractions." I would posit that these pure, or just, intervals affect the auditory system of humans very differently from the out-of-tune, equally spaced notes of ET. In a just-tuned system, different arrangements of intervals have subtle, but profound differences in excitation of the auditory apparatus of the human neurological system. These whole number relationships invite active listening, even in long-tone steady-state presentations. They are clear, and, I would posit, enable the brain to focus, using the inherent characteristics of human neurology, for extended periods not to open to "pop-culture" tuning. The meditative states induced by the work of La Monte Young are not passive, but are active meditative conditions. (Johnson, 2005) This is enabled by the clarity of whole-number intervals.

Most neuro-auditory research related to pitch to date, has involved measuring the different brain responses to different chromatic intervals. Also, much of the research focuses on the immediate–i.e. above 500 milliseconds–response in neural circuits. I would like to see research that illuminates the differences in responses amongst whole number just intervals and the irrational fractions of ET. In addiction to the immediate neural firings, I had like to see what happens over many minutes. Some researchers are beginning to measure brain responses to medleys of music over extended time. (Alluri et al., 2013)

In La Monte Young's spaces at that time, I learned the power of whole-number justly tuned intervals in acoustically responsive spaces with subtly used speakers and amplification. The other needed aspect of this experience is time: time in which to slow the brain, stop being physically agitated, and listen deeply into sound and space. The activity of listening in that way is phenomenally grounding, because it requires active listening; if one is passive, it can become numbing, but with active listening it becomes an aesthetic and emotional journey. This something the composer Pauline Oliveros taught me repeatedly over the years.

Unfortunately, Dia Art Foundation ran into financial difficulties, closed the building and sold it. La Monte Young and Marian Zazeela moved back to Church Street in Tribeca and still host the public in their "Dream House."

During the late 1980s Oliveros encouraged me to work with Loren Rush and the Good Sound Foundation (GSF). Simply put, GSF was dedicated to enhancing – not just amplifying the sound of – poor acoustics in public rooms. It was posited by Loren Rush that a poor acoustic space could be made to provide a vastly improved aural experience to its audiences through the skilful utilization of electro-acoustics.

Such a venture was made possible by the technologies of Meyer Sound Labs, as well as the collaboration of sound engineers and acousticians. GSF assisted a number of non-

profits with difficult acoustics issues. We never got to "fix" a symphony hall, though.

One museum had a large exhibition hall whose acoustics were so intolerable, staff had to be rotated out of the space after 45 minutes to avoid miserable headaches, and the public tended to leave the museum in a rush, skipping the gift shop. At a major university, professors complained about certain lecture halls in which they never felt they could communicate with their students. GSF was able to help some groups, while others had acoustic issues requiring much more money than was available.

Since that time, the number of bad acoustic spaces I have encountered dwarfs the number of good spaces. I am beginning to have an appreciation for the neurology behind rewarding versus frustrating sonic experiences. I think that enabling the neuro-auditory system to find clarity in the sound is a profoundly important goal in music and sound art.

John Meyer, founder of Meyer Sound Labs, has argued for years that one of the most important issues in electro-acoustic sound enhancement is "clarity". With clarity, an overpowering acoustic experience can be achieved without excessive volumes that "muddy" sound. (Meyer, 2013) While there can be paths, acoustically and electro-acoustically, to achieving clarity, ignoring the need for that clarity, leaves the artist with immediately diminished resources.

Those who find their own unique clarity will be met with comprehension and appreciation. Those who muddle the comprehension of the audience will be met with apathy. It is the way the brain works.

Sound Art, Art, Music
- Douglas Kahn

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Foreword *I began writing history in the 1980s as an artist attempting to understand the activities of the communities in which I was involved: a* mélange *of artists, musicians, poets, activists, and aficionados, in other words, a classical Bohemia that has itself historically produced its own historians. By the time I wrote "Sound Art, Art, Music" in response to a request by Benjamin Basan, editor of a special issue of The Iowa Review Web, I was solely a historian with a fondness for the long view. I took the opportunity not so much to express my impatience with the short view ascendancy of the term "sound art" – I knew already that it was unfruitful to battle a symbiosis of branding and vernacular – but to weave to cautionary tale of how some of its discursive dynamics were closing down complexities, context and possibilities and closing out many of the artists (in the general sense) responsible for its development. The term, it seemed, was too terminal. My latest book Earth Sound Earth Signal required that I spend most of my time in the past, I am unable now eight years later to update my opinion. I do, however, still hold to the sentiment that it is better to infuse ink into capillaries rather than spill it on board distinctions.*

I am not particularly fond of the term *sound art*. I prefer the more generic *sound in the arts*. My last book was subtitled *A history of sound in the arts*; there was no mention of *sound art* and not only because it was outside the historical scope of the book. *Sound in the arts* is a huge topic, especially when one keeps in mind the synthetic nature of the arts, i. e., the various intersecting social, cultural, and environmental realities wittingly and unwittingly embodied in any one of the innumerable factors that go into producing, experiencing, and understanding a particular work. *Sound art* is a smaller topic, if what is meant is that moment that artists, in the general sense of the word, began calling what they were doing *sound art*. In my experience, artists started to use *sound art* in this way during the 1980s, although there were plenty of artists doing similar things with sound earlier and not necessarily calling what they did *sound art*. The topic becomes smaller still if what is

meant is the term that refers to what began a few years ago, and it is this meaning that has become well known.

I realize that railing against the widespread use of a term is obviously not a wise use of time. That has not prevented many others wasting time on names. None of the minimalist composers seem to like the term *minimalist* but they were more than willing to live in the shadow of that flag, if not salute. The Situationists despised the term Situationism but then again they spent an inordinate amount of time policing language, and let us not forget the irreparable rift between the Judean People' Front and the People's Front of Judea. Yet, drawing short of name fatigue, there are good reasons to question the usefulness of the term *sound art*. Most artists using sound use many other materials, phenomena, conceptual and sensory modes as well, even when there is only sound. In this respect alone, *sound* tends to narrow down the sphere of understanding rather than suggest that there is in fact a more comprehensive approach being enacted. Instead, art not using sound should be called deaf art, silent art, mute art or, worst of all, mine art (the art if mimes harassing the public). Many artists who have been using sound for a long time would rather be called artists than sound artists. A similar thing happened with female artists in the late 1970s when, after collectively gaining recognition, were not fond of the segregation that went with the term *women artists*. Liz Phillips, who was creating artistic "sound structures" circa 1970, may perhaps feel doubly adamant.

Still, most artists, curators and writers seem to think the term *sound art* is okay. Perhaps cutting down complication factors is not a serious problem, and there is a little transgressive romance to be had by sounding off in the lair of vision. More likely is that people are swept up in circumstance, using the term as matter of convenience no matter how annoying and imperfect. It is clear also that a few folks see it an opportunity to exploit a momentary and monetary cache in whatever system of exchange they may trade. More positively, there are a number of artists who have developed substantial personal understandings of *sound art* that may or may not overlap with prevailing understandings.

My own suspicion come from the fact that the term was reinvigorated only when certain metropolitan art centers–their markets, institutions and discourses, and only then a certain subset of those–"discovered" this thing called *sound art*. In London, it is supposed to have jumped off with the Hayward Gallery exhibition *Sonic Boom*. Such representations seem odd to many artists from Continental Europe, the Nordic nations, Canada, Australia, New Zeeland, Japan, Mexico, and even to Americas outside the art market purview of a discrete commercial sector of New York City. Indeed, these representations are odd everywhere there had been *sound art* exhibitions and events prior to 2000. At the time of *Sonic Boom* I was living in Australia, which was already onto its third generation of artists dealing with sound and, internationally, off the top of my head I can think about a dozen high profile groups sound exhibitions going back to Sound at Los Angeles Institute of Contemporary art in 1979 and *Für Augen und Ohren* at the Akademie der Künste in Berlin in 1980. Just follow the names of people like Rene and Ursula Block in Germany, Heidi Grundmann in Austria, Andrew McLennan and Roz Cheney in Australia, Dan Lander in Canada, to find just a few longstanding hubs of activity. For nearly two decades of *self-described sound art* and over two decades of *sound art-in-effect*, there was I fact a noticeable lack of activity in the more official sectors of New York and London.

During the 1980s, at least in Australia, the United States, and Canada, people working in sound used a variety of terms referring to *art*: radio art, audio art and sound art. All these terms have their own geneses, and certainly

many of the people involved had been active from at least since the 1970s in the U.S. alone (the work of William and Mary Buchen, Paul DeMarinis, Bill Fontana, Liz Phillips, Nicolas Collins' *Pea Soup*; David Behrman, Robert Watts and Robert Diamond's *Cloud Music*; and Clancy and Pulsa a bit earlier, come to mind), with another generation of Fluxus, intermedia artists and experimental musicians setting the sound stage more than a decade before that. In fact, Paul DeMarinis reminded me in conversation, experimental music up until the early 1970s accommodated what would now be called sound art, but by the mid- to late-70s not only had art spaces become increasingly amenable to sound works, but musical venues and culture had grown more conservative (the rise of Phillip Glass being emblematic) and less interested toward experimentalism.

From my own experience, during the 1980s the term *art* was valued for its ability through its different forms–art, the arts, artists, artistic–to be generalized beyond the fine arts, visual arts and the so-called artworld. It was on that generalized terrain where a postmodern mobility could be found heroically riding roughshod over categorical imperialisms while hand delivering promise of greater artistic possibility. Those working in sound at that time were (as they are now) from many different backgrounds–music, theatre, "visual art", literature, cinema, media arts, media activism, sciences, engineering–and working among equally diverse forms and venues. The generalized notion of "art" seemed to be the most innocuous way to talk about this activity, since it provided plenty rhetorical room to move. Some artists made sound their sustained focus; others used it temporarily and then got back to what they were doing previously or moved on; others were somewhere between. The accommodative character of art was the most salient feature, whereas sound, audio, or radio were necessary but secondary and, at times, interchangeable terms.

The recourse to *art* was because it was more capacious, discursively and institutionally, than *music*. Music, of all the arts, fancied itself as having an artistic monopoly on sound, but during the 1980s it was only able to muster up ideas of two old warriors–*musique concrète* and John Cage–to lay aesthetic claim to the new activity. It might be difficult to appreciate today, amid the present-day cacophony of micro-genres and the immediate access and discourse of the internet, that only two decades ago people who used recorded sound, environmental sounds, identifiable sounds, noise or in some way approached sound as a material were commonly met by "Oh, that's a *concrète* piece" or "It's like Cage…" This occurred in official institutional responses as well as personal conversation. In contrast to such mind-numbing misunderstanding, art, no matter how awkward and reductive, seemed hospitable as well as adept at reworking its concepts to fit contemporary activities.

The ideas of *musique concrète* and Cage were late-modernist products of the late-1940s and early 1950s, which means they were already 30 years and older by the time the 1980s rolled around. Also vying for attention at the time among people more familiar with a range of activities were sound poetry, *Das neue Hörspiel*, and text sound, but their aesthetic programs were either too proscribed (sound poetry) or too vague to explain much. All of them could get in the way of rehearsing a little postmodern sensibility, responding to theoretical provocations, and engaging in the sport of "problematizing" boundaries.

The aesthetic inertia exerted by *musique concrète* and Cage arose from their own context: although they were marginal to the stodgy project of Western art music, they were still attached to it. The accompanying discourses were also not very useful. Musicology, the least intrepid of academic disciplines, had little to day about sound in general, although it had quite a bit to say about how very finite sets of sounds

were organized. Musicologists who ventured out to the margins found themselves trying to protect their topics from the gravitational pull of musicology as a whole. In contrast, there was revitalization, excitement, and theoretical embrace about sound in the grassroots art world, if not among its official organs and venues. Also, the 1980s were a field-day for theory, especially French, in the arts in general, and sound had the added attraction of being the blind spot within a theoretical practice on the lookout for blind spots. The near total lack of history was also refreshing, not in the normal amnesiac American way, but because the absence of sound meant that much more than just the progenitors of sound in the arts could be investigated.

In Canada there was the added element of *soundscape* with the publication in 1977 of R. Murray Schafer's book *Tuning of the World*. While the book's main arguments were historical and public-policy oriented, its underlying artistic assumptions and provocations did not go beyond music and Cagean ideas, except perhaps that they could be found traipsing around outdoors draped in very expensive tape records, cables snagged in the underbrush. To this was added a complementary Francophone emphasis on electro-acoustic music imported from *musique concrète*. It was in this Canadian context that Dan Lander; Toronto audio artist and of the editors of *Sound by Artists*, came up with the idea of "musicalization of sound." Perhaps this idea was prompted by his familiarity with the arts of sound from around the world, informed by books coming through Art Metropole and cassettes exchanged through the international networks of cassette culture. In any case, his idea was widely applicable on both practical and theoretical levels. I took Lander's idea and begun to historically research and substantiate it, at first in the late-1980s and later in my book *Noise, Water, Meat*.

Although the *musicalization of sound* is not an overly complicated idea, it has met with some confusion. A bit of historical detachment helps. Cage and *musique concrète* both involved an admonition against various significances of sound. It was a hangover from 19th century arguments against the mimetic properties of program music and was rehearsed through avant-garde music in the first half of the century through the post-war years. *Musique concrète* attempted to eradicate troublesome indexical qualities through direct manipulation of the sound on tape (speeding up, slowing down, reversing, cutting up, etc.), while Cage extended these operations from production to reception in order to hold a last line of defence at the psychological threshold between listening and thought. Throughout this history, prohibition was most often set against imitative sounds, but it was part of a larger social and ecological deracination of sound. It became particularly difficult to adhere to within a media-saturated society that had loaded up sounds with multiple and ever-changing meanings, and had informed the experience of listening far beyond the sites of media. Perhaps it was a generational difference. Cage's 25-year retrospective concert took place in 1958, when top-40 radio was new and television had already begun babysitting some of the artists who were active in the 1980s.

Late-modernist music warded off imitative sounds because it was thought that they channeled attention too restrictively. If you look at the examples of sounds they give, it becomes obvious that they had a trivial notion about how sounds mean and how meaning itself works. In reality, sounds are never far enough above or below society to escape poetics, bodies, materials, technologies, discursive and institutional contexts or the beck-and-call of phenomenology's "auditory imagination." All that needs to happen is to admit that consciousness plays a part of auditory perception. Even if one wished to maintain a strict division between a type of musical listening that imagines to hear a range of other contents riding the vibrations

of sound, the all that needs to happen is to admit the possibility of different modes of listening existing simultaneously or oscillating quickly. Rahsaan Roland Kirk, introducing a piece of music where he plays two melodies simultaneously, says, "it's splittin' the mind in two parts. It's making one part of your mind say 'oo-bla-dee', and making the other part of your mind say, 'What does he mean?'"

There are some artists who have used the idea of musicalization to say what they were doing was not music. The recently trafficked idea that sound art is really about space whereas music is about time is truly a caricature of earlier positions. For most of the people working in the 1980s it was not important to say one way or the other, because such a distinction presumed the type of demarcation that the concept of musicalization was trying to criticize in the first place. That is, not much would be accomplished by keeping old fences if what was desired initially was a terrain upon which artists could move freely. Besides, a division between sound art and music would be like Rhode Island seceding from the U.S. motivated by the fact that it is not really and island. Because of the power imbalance, no one would really care, let alone care about an arcane argument. *Musicalization* was a means to identify a particular technical and discursive approach to the artistic use of sound, not declaration of independence. Of course, "sound artists" separate themselves from music at their peril. The seemingly infinite use of a finite set of sounds is a model to be emulated now that a seemingly infinite set of sounds is available. Craft, discipline, and virtuosity, even a healthy pretence for profound and improvisatory insight would go a long way at improving all the arts of sound.

More positively, one of the offshoots of the *musicalization of sound* is an encouragement to hear complexly and comprehensively. This would be applicable to what people consider music as well. For example, John Oswald's *plunderphonic* pieces are composed with social, cultural and poetic realities and possibilities purposefully ingrained in his notion of the sound. This was already typified in some of his earlier work that was inspired by William Burroughs's idea about cut-ups and even used Burroughs's own voice in some pieces. Besides Cage, Burroughs is the other great post-war sound theorist with respect to the arts, especially with regard to technology. Burroughs' literary preoccupations, in contrast to Cage, invited all manner of meaning into every relation of sound, listening and technology and mitigated against the various reductions of musicalization. You can see this operating in Oswald's plunderphonics, with its complex weaving of conceptual and affective references to musical cultures, intellectual property issues, technological repetition, etc. Thus, plunderphonics may sound like music but it has not retreated to proscriptions against hearing the world anew in all its myriad attributes, i.e., the presence of music cannot be equated with musicalization.

V. Biographies

Lawrence Abu Hamdan is an artist, 'private ear', and currently a fellow at the Vera List center Center for Art and politics Politics at the at the New School, NYC. His projects have taken the form of audiovisual installations, performances, photography, Islamic sermons, cassette tape compositions, potato chip packets, essays, and lectures. In 2013 Abu Hamdan's audio documentary *The Freedom of Speech Itself* was submitted as evidence at the UK asylum tribunal where the artist himself was called to testify as an expert witness. He continues to make sonic analyses for legal investigations and advocacy for human rights groups including Defence for Children International and Amnesty International. His solo exhibitions include, *Earshot at Portikus Frankfurt* (2016), *"Taqiyya"* at Kunsthalle St Gallen (2015); *Tape Echo* (2013/ 14) at Beirut in Cairo, and at Van AbbeMuseum, Eindhoven; *The Freedom Of Speech Itself* (2012) at The Showroom, London; and *The Whole Truth* (2012) at Casco, Utrecht. Additionally his works have been exhibited and performed at The New Museum Triennial (2015), The Shanghai Biennial (2014), and at the The Whitechapel Gallery, the MACBA Barcelona, Tate Modern London, Museu d'Art Contemporani de Barcelona (MACBA), and the Museum of Modern Art Antwerp (MuHKA) Antwerp. His works are part of collections at MoMA New York, Van AbbeMuseum Eindhoven and the Arts Council, England.

Francis Alÿs was born in Antwerp in1959. He lives and works in Mexico City. Trained as an architect, Francis Alÿs moved to Mexico in 1986 and entered the field of visual arts. His practice embraces multiple medias, from painting and drawing to video and photography. Although he is based in Mexico City, he has done over the last 20 years numerous projects in collaboration with local communities around the world, from South America to North Africa and most recently with teenagers in the Turkey-Armenian border. He has had solo exhibitions in Museums worldwide, such as the MoMA in New York, Tate Modern, Dia Art Foundation, MACBA and many more participations in groups shows and biennials. He was awarded the Blue Orange prize in 2004, the Vincent Award in 2008 and BACA-laureate prize in 2010.

Vartan Avakian an artist based in Beirut born in 1977 in Byblos, Lebanon. He works with video, photography and natural material. Avakian studied Architecture and Urban Culture at the Universitat Pompeu Fabra and the Centre de Cultura Contemporània de Barcelona, and Communication Arts at the Lebanese American University in Beirut. He is a founding member of the art collective Atfal Ahdath and a member of the Arab Image Foundation. Avakian was the recipient of Abraaj Group Art Prize in 2013. He is represented by Kalfayan Galleries, Athens-Thessaloniki. Since 2007, his work has been widely shown around the world including Garage Museum of Contemporary Art, Moscow (2016), Sursock Museum, Beirut (2015), Arts Santa Mònica, Barcelona (2015), Mori Art Museum, Tokyo (2012), Transmerdiale 2K + 12, Berlin, (2012), Wallach Art Gallery, New York (2012), Sharjah Biennial X (2011), Pratt Manhattan Gallery, New York (2011), South London Gallery, (2011), 33rd Cinemed, Montpellier (2011), Home Works V, Beirut (2010), LEXART, Los Angeles (2010), Tokyo Wonder Site (2009), Meeting Points 5, Beirut (2007).

Pauline Boudry and Renate Lorenz have been working together in Berlin since 2007. Their staged films and film installations often start with a song, a picture, a film or a script from

the past. They produce performances for the camera, staging the actions of individuals and groups living — indeed thriving — in defiance of normality, law and economics. Their films upset normative historical narratives, as figures across time are staged, projected and layered. Their performers are choreographers, artists and musicians, with whom they are having a long-term conversation about performance, the meaning of visibility since early modernity, the pathologization of bodies, but also about glamour and resistance.

Moyra Davey was born in Canada in 1958. She is a photographer/filmmaker. She has produced six narrative videos including *Notes On Blue* (2015), *My Saints* (2014), *Les Goddesses* (2011) and *Fifty Minutes* (2006). She is the author of *Burn the Diaries*, *I'm Your Fan*, *Long Life Cool White*, *The Problem of Reading* and editor of *Mother Reader: Essential Writings on Motherhood*. Davey lives in New York City where she is currently at work on a new video commission for a solo show at Kunshalle Bergen in November 2016.

Melissa Dubbin and Aaron Davidson have co-authored a body of works producing forms, objects, images and experiences, equally incorporating the mediums of photography, video, sound, performance, sculpture and artists books since they began working together in 1998. Recent solo exhibitions include Audio Visual Arts (AVA), New York, NY (2013); Henie Onstad Kunstsenter, Høvikodden, Norway (2012); and Nýló, The Living Art Museum, Reykjavik, Iceland (2012). Recent group exhibitions include *Early Spring*, Campoli Presti, Paris (2016), *Bitter Sweet Symphony*, Until Then, Paris (2016); *Some Artists' Artists at Marian Goodman Gallery*, New York (2014); The Artist's Institute, New York, NY (2014); and *Art of Its Own Making* at The Pulitzer Foundation for the Arts, St. Louis, MI (2014). They exhibited internationally at museums, galleries, and art centers including SculptureCenter, Long Island City, NY; Wexner Center for the Arts, Columbus, Ohio; Overgaden, Copenhagen, Denmark; Exit Art, New York, NY; New Museum, New York, NY; Museum of Contemporary Art, Santa Barbara, California; 2004 Gwangju Biennale, Korea; and Moderna Museet, Stockholm, Sweden.Dubbin and Davidson live and work in Brooklyn, New York. They are currently artists-inresidence at the newly founded Pinault Collection Residency in Lens, France (2016).

Pierre Huyghe was born in 1962. He is a French artist who creates projects that point up multiple, complex narratives, often within pre-existing facts and fictionals or real cultural events. In a rich body of work that includes films, installations, and sculptures, Huyghe suggests the ways in which identity and subjective experience are deeply informed by particular historical moments. Huyghe's investigations into cultural production explore how media representations and social rituals shape contemporary reality.

Alvin Lucier: A trailblazing force in electro-acoustic music, avant-garde composer and performer Alvin Lucier was born in Nashua, New Hampshire in 1931; educated at Yale and Brandeis, he also spent two years in Rome on a Fulbright Scholarship before returning to Brandeis in 1962 to teach and conduct the university's chamber chorus. His breakthrough composition, *Music for Solo Performer* (1964 - 1965) for Enormously Amplified Brain Waves and Percussion, was the first work to feature sounds generated by brain waves in live performance. With this piece he also discovered the physicality of sound and acoustical phenomena have been the main subject of his work since. As in 1970s landmark *I am Sitting in A Room*, in which recorded speech was played back into a room and re-recorded there dozens of times, the space - the natural resonances of the space - gradually filtering the speech into pure sound. 1977's *Music on a Long Thin Wire* was a further extension of Lucier's fascination with the physics of sound - a piece featuring a very long wire passed through the poles of

a large magnet and driven by an amplified oscillator, the amplified vibrations yield beautiful acoustical phenomena. A professor at Wesleyan University from 1970 onward, Lucier's later works additionally included a number of sound installations as well as works for solo instruments, chamber ensembles, and orchestra.

Christian Marclay (San Rafael, CA, 1955) works in a wide range of media, including sculpture, video, photography, collage, and performance. For more than 30 years, he has been exploring the connections between the visual and the audible, creating works in which these two distinct sensorial experiences enrich and challenge each other. Marclay's work has been shown in museums and galleries internationally. He has had important one-person exhibitions at the Kunsthaus, Zurich (1997), Museum of Contemporary Art, Chicago (2001), San Francisco Museum of Modern Art (2002), Whitney Museum of American Art, New York (2010), and the Garage Center for Contemporary Culture, Moscow (2011). Marclay received the Golden Lion award for best artist at the 54th Venice Biennale for his 24-hours virtuosic video piece *The Clock*, which was first shown at White Cube in London in 2010. Since then, *The Clock* has been exhibited at a number of institutions worldwide including Paula Cooper Gallery (2011), the Museum of Modern Art, New York (2012), San Francisco Museum of Modern Art (2013), and Guggenheim Bilbao (2014).

Olaf Nicolai is considered one of Germany's leading artists. He takes on a range of conceptual themes, from political and cultural critiques to inquiries into human perception. A recurring subject is the aesthetic appropriation of nature by human culture and design, explored through mixed-media sculptures and images, as in his juxtaposition of plant forms with depictions of hand gestures in Italian Renaissance paintings. "Questions of form, moods, attitudes, and style are not just vain play with surfaces," Nicolai has said. "They are questions of organisational forms of activities." In his recent work *Escalier du Chant (Staircase of Song)* (2011), Nicolai took over the sweeping staircase of Munich's modern art museum, Pinakothek der Moderne, for one Sunday of each month in 2011. Throughout the day, performers would sing the songs of 12 international contemporary composers which addressed political issues that took place throughout that year creating a new aesthetic context for the year's political events.

Sharif Sehnaoui is a free improvising guitarist. He plays both electric and acoustic guitars, with (or without) extended and prepared techniques, focusing on expanding the intrinsic possibilities of these instruments without the use of effects or electronics. He now resides in Beirut, his hometown, after more than a decade in Paris, where he started his career as an improviser in 1998, playing at Instants Chavirés where he was a member of several orchestras. He has since performed his music worldwide and played in many clubs and festivals such as Soundfield (Chicago), Moers, Konfrontationen (Nickelsdorf), Météo Music Festival (Mulhouse), CTM & Maerzmusik (Berlin), FEST (Tunis), Skanu Mesz (Riga), 100Live (Cairo) or Musikprotokoll (Graz). In Lebanon, he actively contributed to the emergence of an unprecedented experimental music scene. Along with Mazen Kerbaj he created in 2000 *Irtijal*, the first improvised and new music annual international festival in the Arab world. *Irtijal* celebrated its XVth anniversary in 2015. He also runs two record labels: *Al Maslakh*, devoted to 'publish the un-publishable' on the Lebanese musical scene and *Annihaya*, focusing on sampling, recycling and the displacement of various aspects of popular culture.

Jessica Warboys (1977 UK) studied at Falmouth College of Arts and Slade School of Art, London. She currently lives between Suffolk and Berlin where she works with film, painting and sculpture. She was selected for Artists Film International, Whitechapel Art Gallery, London,

in 2013, and participated in dOCUMENTA 13 (2012). Further afield she participated in 9ª Bienal do Mercosul | Porto Alegre, Brazil (2013) and more recently she has exhibited at Gaudel de Stampa, Paris, State of Concept, Athens and 1857, Oslo (2015) and Kunstverein, Amsterdam (2016). Her work is currently on view in the British Art Show 8 (2016).

Cynthia Zaven is a composer, pianist and artist based in Beirut. She performs classical, experimental and improvised music in solo shows as well as in collaboration with other artists. Her projects combine a variety of media including video, photography, performance and the use of archive material to explore the relationship between sound, memory and identity through interwoven narratives. Since 1993, Zaven has also composed original scores and created sound designs for film, theater, live performance, dance, visual art, and conceptual art projects. The award-winning works have been exhibited at festivals worldwide including the international film festivals at Locarno, Toronto, Edinburgh, Dubai, as well as IDFA, the Tribeca Film Festival, the Kassel Documentary Film and Video Festival, Videobrasil, the Bern Kunstmuseum, the Institute of Contemporary Art London and Oxford's Museum of Modern Art. In July 2015, Eurasians Unity, the ensemble she is member of was awarded the Ruth prize for world music at the Rudolstadt World Music Festival in Germany. Her music has been published by the Berlin based label, Staalplaat. She is currently a piano professor at the Higher National Conservatory of Music in Beirut.

Esma' / Listen
Beirut Art Center
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www.beirutartcenter.org

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