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Revue Hybrid

Listening with the body and an analogue sensibility: the Villa Arson's "sound art" school in the digital age

Léa Dreyer

Translation : Tresl Murphy

- 1 The most interesting feature of the 2011 exhibition *Le Temps de l'Ecoute*¹ was the way curators Eric Mangion and Jean-Marc Avrilla drew up a comprehensive inventory of sound and music practices on the Côte d'Azur since the fifties, and in doing so, outlined a range of intergenerational theoretical and aesthetic connections as a blueprint for a critical analysis. The show also highlighted the beginnings of a school of thought and a heritage within the artistic landscape that originated with Lars Fredrikson's teachings on sound at the Villa Arson. Fredrikson's sound studio brought together a group of artists that included Eléonore Bak, Isabelle Sordage, Ludovic Lignon and Pascal Broccolichi as part of the most long-lasting listening community in a regional sound project based on "fleeting or uncoordinated experiments".² The group connected around the transmission of an "art of listening" that was the organic follow-on from the radically non-musical experiments of the first sound artists in the second half of the 20th century, including Fredrikson himself. Historically, it constituted the first ever sound department in a French art school, well before they became common in the 2000s.
- 2 In 1970, Lars Fredrikson joined the faculty at the Villa Arson school, which was then the École des Arts Décoratifs de Nice (ENAD)³, to teach engraving. The following year he became an audio-visual teacher, working alongside Bob Guiny. It is hard to find the exact date for the establishment of the sound studio: we can just say that from 1986, when Christian Bernard⁴ took over as director of the Villa, it was made an official part of the curriculum. Under the direction of Lars Fredrikson, the sound studio at the Villa Arson was exclusively reserved for "sound art". It was neither a platform to support

multimedia projects nor a place where music was composed. This is why a particular approach to sound flourished there at a time when it was seriously misunderstood by French art schools, and when sound art was struggling to stand out from the world of musical composition.

Between 1993 and 1998, in French art schools, sound was not yet considered to be an art form (the likes of Lars Fredrikson were thin on the ground). My educational path was a messy back-and-forth between teachers who supported my approach and those who felt I would be better off at IRCAM (which was the last place I wanted to study!).⁵

- 3 The "Fredriksonian" approach focused on the connection between scientific research and a poetic "being-in-the-world", calling on the notion of hearing in its broadest sense, that is to say, an effort of perception toward an ensemble of energetic flows that are close by or further away and the subjective and intuitive corporeal exploration of these flows. Lars Fredrikson's teachings on sound are based in an art-based and inclusive approach to vibrations. It is not limited to sound that "sounds", in other words, that is audible, as in R. Murray Schafer's approach. The latter being but a felt manifestation of a broad vibratory spectrum that includes infrasound and ultrasound, as well as the full electromagnetic spectrum.
- 4 The study of sound in Art History suffers from the ontological difficulty caused by the fragility of the sonic medium relative to other art forms. This fragility is all the more obvious in the approach Lars Fredrikson and his students have to sound, due to factors that make its treatment highly complex. The overlapping factors include their refusal to have sound installations recorded as they insist on the need for a live listening experience, the impossibility of generating a visual document for archive purposes and a tendency to work in analogue which makes the "reconstitution" of sound art difficult. So, in order to better understand the heritage of Lars Fredrikson, we must take into account his attitude to teaching in the way he passed on sound practices and listening, characterised by artistic profiles that, despite their variety, share the need for a live, *méthexique*⁶ (responsive), spatial and physical listening experience.

As a student, I was aware that he was a good artist, but it was in fact his natural talent as an educator that carried us all. He mainly taught us how to listen, to listen to ourselves, our own spaces, to living spaces and the art spaces we were to develop, each in our own way. He taught us to listen to others also. Physical experience is the only way to make progress in this area, and that is where he led us.⁷
- 5 In addition, it is thanks to federating events, different teaching approaches and places where knowledge was passed on that the idea of the Fredriksonian "art sound school" has today spread both institutionally and geographically.

"Imageophobia" and the aesthetic threshold: a tenuous teaching approach

- 6 The fact that the studio existed officially within the school and that students were following a specific curriculum did not, initially, increase awareness of sound art on an institutional level. When Isabelle Sordage presented her final project in 1990, the jury refused it on the pretext that it did not come under the category of fine art and was in fact a music project. She submitted the same work the following year, underlining its

legitimacy as art and graduated with honours. This quasi rejection of sound art in art schools can be traced back to Lars Fredrikson's tenuous, radical approach.

- 7 The Fredriksonian approach was "image-phobic" in as much as it violently rejected linguistic and visual structures, as the artist prevented the production of any form of music in the sound studio and distanced himself from the prevailing conceptualist approach of the time. His teaching involved a slow process of deconditioning. The first stage is to question the discreet activity of listening, to become aware of it as a subjective and shared action that is not definitive. Listening the Fredriksonian way involves continuous attention and doubt, tied up with vibratory phenomena. In this way, Fredrikson was in line with Max Neuhaus' notion of an "aural character". The "aural character" is perceived by the innate and not the cultural sense of hearing, giving the sound "an extra layer of meaning, added to verbal language⁸". This approach can also be explained by the connections Lars Fredrikson and some of his students maintained with the practice of aural poetry, where they were to find a common ground that their interaction with "traditional" artists lacked.
- 8 During the years when he taught at the sound studio, he did not hold listening sessions outside – like Max Neuhaus' *soundwalks* in the seventies, that were to become even more widespread in Murray Schafer's teaching⁹ –, but the sound studio was essentially a place for philosophical exchanges and listening. These collective and individual sharing sessions, allowed students to understand what went into qualitative listening in spatial terms and its perceptive nuances. Fredrikson exposed them to works by Alvin Lucier, Max Neuhaus and Steve Reich. They learned about the importance of an aural experience that involves the discreet efficiency¹⁰ of tiny sound variations and does not thunder.

I am often asked why I don't raise the volume in my installations, as if that which is visible was not sufficient guarantee of the authenticity and the source of the sounds produced. I always prefer to play with the illusion of sound images and concentrate on the manifestations created by spatial propagations, rather than merely upping the volume on the amps to try to get everyone to agree on what it means to listen...

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"Analogical Suprematism"¹²: transduction and remanence

- 9 In the nineteen sixties, Lars Fredrikson started to create electro-mechanic pieces, collages and paintings that were all, beyond their varied mediums, based on his thinking about invisible forces. In fact, when describing what Fredrikson does, Benhamou coined the expression "analogical Suprematism" to describe the intuitive version of a means of expressing the tensions produced by the "energy of the void" in various ways, the complex structures of what we cannot see. Sound, for Fredrikson, does not exist independently, it is one of the registers of the invisible and can only be understood in terms of frequencies. This way of thinking echoes pythagorean philosophy that describes the ubiquity of inaudible sounds from the telluric scale to the sidereal scale¹³, and ties up with Suprematism and the early phases of Russian constructivism that so influenced Fredrikson's work. They share the feeling of a world based on the synchronicity of the universe's rhythms with our inner rhythms, in other words, an intimate, kinaesthetic connection with the elemental energies.

- 10 The group of artists that emerged from the sound studio shares this thinking about an energy that takes into account an inaudible, invisible "already there". Pascal Broccolichi's first contact with Lars Fredrikson happened when listening to VHF (Very High Frequency) radio recordings, taken by Broccolichi while at sea. Today, transduction is a very important part of the artist's work; he uses it as a basis for his complex "meta-landscapes". Lignon's work involves converting electromagnetic micro-events that are generated randomly on electronic circuit boards and manifest through little indicator lights. The sonic language of this listening community is based on exercises involving transduction, equivalency and remanence. They have given the art form a vocabulary that can be seen as the grammar that underpins spatial construction, taking pre-existing architectural data into account that the artists then conjugate with their own structures that can be intangible or physical.
- 11 Isabelle Sordage came to the Villa Arson in 1984. Her area of interest was entropy in the realm of energy and she examined disorganisation in the living world through mathematical models. "I was so fascinated by chaos and disappearance that the way I approached the *sensible* was in no way satisfied by the fixed register of images and the visible that was imposed by art schools at the time."¹⁴ Sordage joined the sound studio soon after it opened in 1986, and became its first student. Academic teaching required that she follow an imitative model based on descriptive geometry, "according to the belief that and fine art work had to involved a three-dimensional space."¹⁵ Sordage replaced the metric system she had learned with Hertz units.
- In some way, I was attempting to transpose the questions sculpture poses about space to the world of sound. I devised a way of putting sound in a space as if it were an actual shape with a particular angle of vision. I thought of the sound object in terms of graphic resolutions and used shadows, surfaces, lines, curves, etc.¹⁶
- 12 Abstracting the line from its mathematic reality opened up possibilities for exploring the "plastic space", that was missing certain visual references. Isabelle Sordage or Ludovic Lignon's work considers the directional wave as a line, and builds this sound line as one would Euclidean geometry, to create a system of equivalence without getting into simulation, giving birth to a type of visual projection that allows this sound architecture to be experienced as an autonomous artistic reality.
- 13 The sound artists that emerged from the Villa Arson, like Pascal Broccolichi or Isabelle Sordage, often create protocols that aim to reveal the graphic aspect of sound vibrations. These transpositions and remanences do not involve subjective and individual listening, their final aspect is the result of a separate graphic fixation with its immobility removed by vibratory phenomena, they lead to a visual and haptic decoding and can be broken down according to "archaic" processes that echo the work of Ernst Chladni, whose tools revealed sound "images" and the spectacular nature of undulatory motifs at the end of the 18th century.

Fig. 1

Isabelle Sordage, *Untitled (Fibra-Frequency series)*, 2014. Print on photo-sensitive paper of motifs made on by infrasounds on the surface of water.

The “body as antenna”: the bodily experience of sound materiality

- ¹⁴ In the same way that Yann Paranthöen sculpts sounds and Knud Viktor paints them, Lars Fredrikson and his students approach sound as a physical art form, and shift the aesthetic of the creative act from the visual register to the domain of vibrating invisibility. From one level of perception to another, they find their raw materials in the analogical medium and invite us to have an exploratory bodily experience, as much in the creative process as the life of the piece.

With the analogical, the relationship to the living is inevitable; the relationship to its plasticity, its mobility, its physicality, its malleability. This all remains intact with the analogical. Even a breath is rich if it is allowed to live. In Lars’ work, breath is very important for example. [...] The analogical is an imprint of the living.¹⁷

- ¹⁵ Eléonore Bak studied art in Cologne. She came to sound in 1985 through her performance experience, and received a research grant to attend the Villa Arson. There, she studied bodily interaction with continuous sound signals and worked mainly with frequency generators. Alongside Lars Fredrikson, she perfected a listening process based on ecological and contextual principles. Her thesis, entitled *Habiter l’in-vu: formes de visualisations sonores (Inhabiting the unseen: forms of sound visualisation)*¹⁸, is a precious record of a theory of listening inherited from her performance experience and her close working relationship with Lars Fredrikson.
- ¹⁶ By reworking Pierre Schaeffer’s theory of the sound object, based on the three data involved in listening to physical music – sound, music and meaning, Bak chose to replace “music” with “plastic”. ¹⁹For Eléonore Bak, the “plastic” data interdepends on the sound and meaning. She constitutes its moving, non-repeatable, situational aspect.

The “meaning” that comes from it is interactional, apperceptive and subjective. Its evolution does not serve a musical intention, but a listening process oriented toward the trail of the sound and its instability.

- 17 Ludovic Lignon’s final project as a student of Fredrikson works a similar transfer. In 1990/92 (1992), he turns musical sound data into physical sound data. In it, he examines pre-existing musical extracts from CDs, vinyl and tapes as a material in itself. “Numerous musical forms went through a mixing deck at the same time, with no added effects or digital retouching. [...] The context was clearly musical but I was accumulating layers of recordings with the intention of a “painter”.²⁰

Fig. 2

Eléonore Bak, Henri Milo (a listened drawing of the Clans fountain), 2007. Charcoal on paper, A3.

- 18 Lars Fredrikson’s teachings and practices enlighten us on the compatibility between technological sound and augmented sensory experience. The sovereignty of the subject, encouraged by the discretion of installations and the invisibility of sound, leads to a conception of listening that incorporates and goes beyond notions of “ambiance”, of sound “landscape”. Fredrikson’s form of listening involves all of the acoustic data of the place, and how they interact with the body as a sensitive “receptor”.
- 19 The “body-as-antenna” is the fruit of an ecologist conception of the immediate surroundings that takes multiple factors into account, a means of bodily connection to various inter-related and complex phenomena. Using techniques of concentration and harmonisation, the body gets to a stage of multisensorial convolution where it soaks up an ensemble of data that can be said to be a form of micro-perception. It is the result of prolonged exposure, of apperceptive involvement, and of a slow “deconditioning” from images, a barrier to plastic experience by keeping environmental motifs at bay. Based on unconscious adjustments, the body-as-antenna becomes a prolongation of its

environment, in a slowed-down, murky time-frame, an elastic spatiality.²¹ While Eléonore Bak developed her methodology by exploring the way it resonates physically as opposed to the psychological impact, the concept of the "body-as-antenna" that she developed with Fredrikson created a theoretical connection between listening technically and rationally and a more meditative process that was developed by Pauline Oliveros, throughout her career, based on the global concept of the *Sonosphere*,²² and termed *Quantum listening*.

The difficult confrontation with digital technology

- 20 The careers of the sound artists that graduated from the Villa Arson were all marked early on by the digital explosion and resulting accessibility. Their profiles are all the more interesting in that they all began working with analogue tools and some continued to do so partly or fully.

When working with analogue tools, there is a loss, but when working with digital tools this loss is transformed. When we listen to a recording – the microphone takes the place of the ears, the tape replaces perception – we perceive a prefigured sound. The fact that the listening process is helped by the microphone, then the headphones, reduces the initially curved space to standardised data [...]. There are a number of different types of distance: cultural distance (we can recognise a sound without assigning it a meaning) and social distance (collective memory, personal memory), the distance between what is experienced and what is represented. Sound being taken over by technology adds a new level of distance, the distance between the real and the virtual [...].²³

- 21 The theoretical and practical confrontation between Bak's "bodily listening" and that of acoustic engineering reveals much about the analogue trend. The virtuality of management and visualisation of sound through a digital interface, as well as the spatialization of sound based on orthonormal geometric points of reference, is, according to Bak, the equivalent of "technology incarceration".²⁴ This helps to understand the problems the artist encountered with engineers, in particular due to the complexity of the micro-movements she uses and the reading of her *jacquards*.²⁵ Nevertheless, she has managed to confirm the technical effectiveness of bodily exploration of the sound space and the validity of her output with experiments carried out in a holophonic Smartroom.²⁶

The Villa Arson "sound school": break-ups and continuity

- 22 Ludovic Lignon took over the management of the Villa Arson's sound studio in 1991, after Lars Fredrikson left. He organised many listening sessions with loudspeakers and worked hard to continue what Fredrikson had started. Jérôme Joy joined the studio in 1992 and became his assistant for three years. The radical changes Joy made in the studio may have led to Lignon's decision to leave.²⁷ The studio was moved from a large space to a more confined, soundproof room. It was entirely fitted out with digital equipment which upset the ergonomics, materiality and temporality of the artists' sound work, as they began to work almost exclusively on screens. This change had an irreversible effect on the nature of the teaching in the studio. The very radical nature

of the practice of sound that had been developed there under Fredrikson meant very little was left behind.

We are a generation of artists that launched into an exploration of alternative, notably ecological currents, pushed by preoccupations with society. [...] As a backlash to the eighties art market that was hugely speculative and gave precedence to objects and paintings, we left physical art forms and the empire of the image to one side and we refused any form of archiving. [...] At the time, the market value for sound art was low so it was a powerful opening for us.²⁸

- 23 In 1995, Jean-Philippe Vienne organised a show at the Villa Arson entitled *Murs du Son; Murmures*.²⁹ He chose not to establish a definition of an artistic genre, but to propose a non-exhaustive ensemble of sound occurrences in art. Lars Fredrikson presented his *Espace intérieur* (1975-95), while his old students – Isabelle Sordage, Ludovic Lignon, Pascal Broccolichi – were invited to take part in the “Murmures” installation. This exhibition was the first to confirm the influence of the sound studio’s output and of Lars Fredrikson teaching for a generation of young artists. In the end however, the outstanding characteristic of the heirs to the Villa Arson’s “sound studio” is their role as educators. A number of structures have been established that mean the Fredriksonian listening process is being handed down in new and varied ways.

Because sound art is often reduced to technological set-ups, because we did not always write the history of sound art and its schools of thought with the same diligence as for the visual arts, because museums do not seem to be that worried, teaching, for me, is a good way to pinpoint things the everyday listener doesn’t realise or cannot perceive in a short space of time...³⁰

- 24 In 1996, Isabelle Sordage founded the Atelier Expérimental, that since 2002 has been located in Clans, near Nice. It focuses on the research process and cohabiting with the pieces, and organises various events for the public through its foundation. Over the years it has welcomed over fifty artists-in-residence, musicians, curators, scientists and art historians, including Eléonore Bak, Ludovic Lignon, Jérôme Joy, Luc Kerléo, Pierre Laurent Cassière, Jean-Marc Lévy Leblond, Eliane Radigue and Emmanuel Holterbach. The residents commit to interactions with the people of Clans and create a piece for the Villa les Vallières’ foundation archive.
- 25 In addition, Eléonore Bak’s research and teaching are a concrete example of the handing down of the Fredriksonian listening process. Her manifold, rich vision of teaching constitutes a veritable academic and artistic extension of the Villa Arson’s “school of sound”. Today, she teaches at ESAL (École Supérieure d’Art de Lorraine), and in 2009 she established the ARS (Atelier de Recherche Sonore).³¹ The ARS is a framework that welcomes students’ artistic projects involving sound and it raises awareness among participants of the technological and scientific domains involved as well as of a methodology of listening. The Atelier gravitates around Bak, and it has partnerships with the CRESSON, the École Nationale Supérieure d’Architecture de Grenoble, Centrale Supélec and schools in Germany.
- 26 The Villa Arson’s sound studio has been part of the “digital department” since Jérôme Joy took over from Lars Fredrikson in 1992, and today is supervised by Pascal Broccolichi, a student of Fredrikson’s who has fully embraced the possibilities provided by digital tools in his work. Broccolichi’s presence does allow a bridge between the tradition of sound as art, but today the studio is mainly digital, and multimedia, and students use it in more general projects. Since Jérôme Joy took over and changed the direction of the studio to more sharing through networks and listening in the internet

age, the studio has developed a broader vision of sound, incorporating political and ecological issues and those raised by the production economy. In addition, we should note that since the 2000s, there has been a real opening up to the transdisciplinary nature of *Sound Studies* in general with many workshops and conferences with guest artists.

- 27 The way some graduates of Lars Fredrikson's reject the supremacy of the digital is not because of a vain or retrograde radicalism. There is no reason to judge the choices of artists like Pascal Broccolichi who choose to work with digital technologies. This is a practice that is based fundamentally in the conception of the experience of flows that attempts to explore a quasi-primitive, bodily "being-in-the-world" and the most tenuous of its territories. It is also evidence of the persistence of anti-discursive and anti-conceptual trends in the second half of the 20th century and is an example of this in the area of sound art, providing a methodological framework to the exploration of these energies of the void.

NOTES

1. Nice, Villa Arson, June 24- October 30 2011, curated by Jean-Marc Avrilla and Eric Mangion. With work by Eliane Radigue, Lars Fredrikson, Isabelle Sordage, Ludovic Lignon, Pascal Broccolichi, Christian Vialard, Vincent Epplay, Jérôme Joy, Arnaud Maguet, Robert Malaval, Jean Dupuy, Thomas Köner... (AVRILLA, Jean-Marc, MANGION, Eric, *Le temps de l'écoute*, [cat. exp., Nice, Villa Arson, June 24- October 30 2011], Dijon, Les presses du réel, 2014).
2. Eric Mangion in AVRILLA, Jean-Marc, MANGION, Eric, *Le temps de l'écoute*, [cat. exp., Nice, Villa Arson, June 24- October 30 2011], Dijon, Les presses du réel, 2014, no page numbers.
3. The École Nationale des Arts Décoratifs de Nice was established in 1972 at the Villa Arson. The same year, the CARI (Centre Artistique de Rencontres Internationales) was set up there.
4. In 1986, the ENAD became the EPIAR (École Pilote Internationale d'Art et de Recherche). Christian Bernard took over all of the institutions at the Villa. He oriented the school's activity very clearly toward contemporary art, as the Art department replaced the previous Communication and Environment departments. In addition, he reinforced links between the Exhibition Centre and teaching: teaching at the Villa benefited from the continuous presence of artists in residence who worked regularly with students. Students were also exposed to internationally recognised exhibitions that took place at the school.
5. HOLTERBACH, Emmanuel, « Microphonie, paysages et trompe-l'oreille », *TACET*, n°3, Les presses du réel, 2014, p. 354.
6. "Depending on the perspective, the subject refers back to themselves as an object. Depending on the listening process, the subject experiences it internally, or uses themselves. [...] Or, in almost Lacanian terms, the visual is a question of a grasp of the imagination [...] while sound is more of symbolic reference. [...] In other terms, the visual tends toward the mimetic, and sound tends toward the *methéxique* (more a question of participation, sharing or "catchiness")"; NANCY, Jean-Luc, *À l'écoute*, Paris, Galilée, 2002, p. 26-27
7. Isabelle Sordage, by email, June 11 2018.
8. *Ibid* p. 198.

9. "In a more general way, it is interesting to point out that these elements of sensitisation to sound that, according to Schafer are part of a coherent teaching approach ("educating the ear"), remain the basis of most of the current sound practice training programmes in France, be they technical (for example, the école Louis Lumière) or artistic (for example, the Ateliers Saint-Sabin ENSCI and some Beaux-Arts schools)". Afterword by Nicolas Misdariis and Patrick Susini in SCHAFFER, Raymond Murray, *Le paysage sonore (...)*, op. cit. p. 406.
10. "Efficiency is the discreet (indirect) way of operating by relying on silent transformations, without making the event jump out, letting the effect grow progressively as part of a process. It is less a question of driving – pompously, heroically – than inducing the effect. Effectiveness now feels to me to be too spectacular, "efficiency" is just a question of yield", JULLIEN, François, *Traité de l'efficacité*, Paris, Grasset, 1996, p. 78-79. Quoted in DAVILA, Thierry, *De l'inframince (...)*, op. cit., p. 18.
11. Pascal Broccolichi, in DAVILA, Thierry, *Pascal Broccolichi, Cartographie de l'inouï*, Dijon, Les presses du réel, 2012, p. 39.
12. BENHAMOU, Maurice, « L'écorché du vide : un suprématisme analogique », in *Le regard analogique*, Paris, L'Harmattan, (to be published soon)
13. HUNT, Frederick Vinton, *Origins in Acoustics*, New Haven, Yale University Press, 1978, p. 12.
14. SORDAGE, Isabelle, unpublished catalogue, p. 5. Some elements are available on the artist's personal website: <http://www.isabelle-sordage.fr/>.
15. *Ibid*, p. 5.
16. *Ibid*, p. 5.
17. Isabelle Sordage, by email, April 12 2018.
18. BAK Eleonore, *Habiter l'in-vu : formes de visualisations sonores*, Architecture, aménagement de l'espace. Thesis supervised by Grégoire Chelkoff, Université Grenoble Alpes, 2016.
19. *Ibid* p. 225.
20. Ludovic Lignon : <http://llignon.net/> (consulted April 12 2018).
21. On this subject: Gaël Gillon, *L'atelier de la création*, "Le corps antenne", a programme by Isabelle Sordage, broadcast on March 5 2013 on France Culture.
22. KAHN, Douglas, "Pauline Oliveros : Sonosphere", in KAHN, Douglas, *Earth Sound Earth Signal*, (...), op. cit., p. 174-186. See also: OLIVEROS, Pauline, "Quantum Listening: From Practice to Theory (to Practice Practice)", 1999, https://soundartarchive.net/articles/Oliveros-1999-Quantum_listening.pdf, consulted April 20 2018.
23. BAK Eleonore, *Habiter l'in-vu (...)*, op. cit., p. 261.
24. BAK, op. cit. p. 49. Expression borrowed from Tim Ingold (INGOLD, Tim, *Une brève histoire des lignes* (2007), French translation by Sophie Renaut, Bruxelles, Zones Sensibles, 2011).
25. "While we read our map in immersive order, engineers read it as a yes/no system, point by point, line by line, from left to right, from top to bottom. While we attempt to reproduce the sum felt of what is on show (in other words, the anachronism of phenomena, their variable geometry, their off-kilterness — and the holophonic let us imagine "simultaneous", continuous playing, of sounds of the same nature —), so as to reveal the extremely fine physiognomy of the ensemble (physical feel, the intensity of appearances and disappearances, voids and solids hidden throughout), engineers concentrate on the reproduction of movements, including the clear appearance/disappearance of phenomena in the form of sequences that are occasionally emphasised by one-off events." *Ibid*, p. 141.
26. Acoustic study room equipped with speakers that allow for the recreation of environments that include virtual sources of sounds moving in space. The *Smartroom* at Centrale Supélec de Metz has a *holoplayer*, that can play 16 sources simultaneously on 76 speakers.
27. Jérôme Joy trained in music. He moved into sharing on networks, and the possibilities provided by the developing internet which allowed for a new approach to listening. When he

started, the studio went 100% digital, changing both the aesthetic orientation and the "ergonomics" of sound practices.

28. BAK Eleonore, *Habiter l'in-vu : formes de visualisations sonores*, Architecture, aménagement de l'espace. Thesis supervised by Grégoire Chelkoff, Université Grenoble Alpes, 2016, p. 41

29. Nice, Villa Arson, July 8 – October 1 1995, curated by Jean-Philippe Vienne. With José Antonio Orts, Pascal Broccolichi, Robert Barry, Lars Fredrikson, Jérôme Joy, Ludovic Lignon, Eric Maillet, Kristin Oppenheim etc. (BOUREL, Michel (dir.), *Mur du son ; Murmures* [exhibition, Nice, Villa Arson, July 8 – October 1 1995], Nice, Villa Arson, 1996 : CD).

30. Eléonore Bak, by email June 11 2018.

31. Obviously, a tribute by Eléonore Bak to Lars Fredrikson.

ABSTRACTS

In recent years, the re-emergence of interest in Lars Fredrikson, a pioneer in experimental sound practices, has raised a number of issues related to the question of sound in art and the pedagogy of listening in schools. Carrying out a plastic and bodily conception of listening, the teaching of Lars Fredrikson at Villa Arson between 1970 and 1991 - where he created the first sound studio in an art school in France - makes it possible to observe the transmission with a generation of artists of sound practices lastingly marked by a rejection of the musical approach and an understanding of sound as "living matter". This shift in the characteristics of sculpture, and more generally of the visual arts, towards the vibrational domain, is accompanied by the persistence of a taste for an "analog aesthetic", which appears on several scales in creation among these artists.

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Keywords: Sound, sound experiences, plastic sound, Villa Arson

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She has a Master's degree in Art History from Paris I-Panthéon Sorbonne University. Under the supervision of Pascal Rousseau, she examined the question of the influence of Foucault's philosophy on the treatment of the constrained body in the minimalist and post-minimalist work of Robert Morris. More recently, she has focused on teaching and the legacy of plastic sound of Lars Fredrikson's listening practice at the Villa Arson. She is currently assisting the preparation of the first retrospective devoted to this artist at MAMAC in Nice.