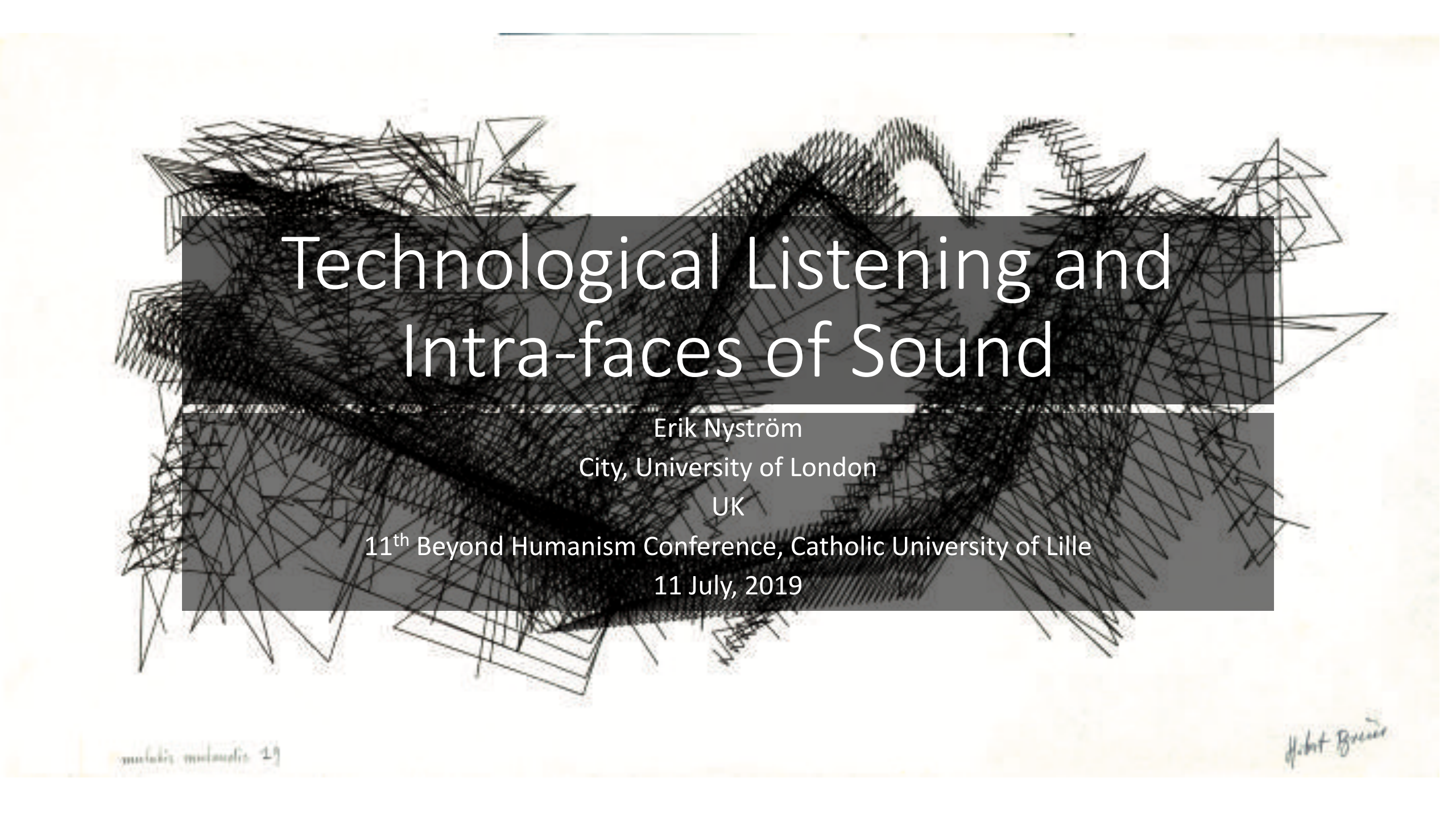

# Technological Listening and Intra-faces of Sound

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Can we account for the difference between technological systems and sonority without taking a dualistic approach?

How do we deal with the alterity of sounds which are not easily framed as ’natural’ and ‘human’, aesthetically?

# A framework for synthetic sound

Technological systems, theory & sound

Listening as a technological process: causality, materiality

Intra-faces of sound and synthetic registers

# Technology and theory

Epistemic tools (Thor Magnusson, 2019, *Sonic Writing*).

Technologies encode systems of thinking and aesthetics.

How does one deal with the technological ‘depth’ of computer music?

# Technology and theory

Herbert Brün:

“I hope always to compose a composition that teaches me the next aesthetics. I try hard not to let my aesthetics compose my next piece.” (1985, *Composers and the Computer*, ed. Curtis Roads: 6)

“..my heritage […] had provided me with a lexicographical knowledge of tunes, harmonic progressions, and timbres. So I always wallowed in a world which took over whenever *I* wanted to do something. It offered itself to me ingratiatingly, again and again and again. I got tired of that.” (ibid.: 4)

# Technology and theory

Acousmatic phenomenology (Pierre Schaeffer)

Technological listening – undesirable

“In spectromorphological thinking we must try to ignore the electroacoustic and computer technology used in the music’s making.”

“Technological listening occurs when a listener ‘perceives’ the technology or technique behind the music rather than the music itself, perhaps to such an extent that true musical meaning is blocked.”

(Denis Smalley, 1997, *Spectromorphology: explaining sound shapes*, 108-9)

# Technology and theory

"The analysis of technics in terms of **end and means** refers to the theory of material, formal, final, and efficient causes. The traditional interpretation of the theory of the four causes has privileged, in its understanding of technics, the efficient cause, the cause that operates – in the artisanal fabrication of an object, for example, the artist himself. The privilege accorded to the efficient cause leads to the instrumental conception of technics according to ends and means. **Since the technical product is not a natural being, it does not have its final cause in itself. The final cause, appearing exterior to the product, resides in the producer, who, while being the efficient cause, equipped with the end, brings to the object the final cause** – the object thereby being no more than the means."

(Bernard Stiegler, *Technics and Time 1:* 8-9)

# Technomorphology / technogenesis

“matter organized technomorphologically is not passive; ***the tendency does not simply derive from an organizing force - the human – it does not belong to a forming intention that would precede the frequentation of matter, and it does not come under the sway of some willful mastery****: the tendency operates, down through time, by selecting forms in a relation of the human living being to the matter it organizes and by which it organizes itself, where none of the terms of the relation hold the secret of the other. “* (ibid.,: 49)

# Listening

David Tudor *Neural Synthesis*

# Technological Ecology - “Welcome the stranger”

"Many natural sounds seem to have characteristic spectral evolutions which, in addition to providing their "signature," are largely responsible for what we judge to **be their lively quality**. In contrast, it is largely the fixed proportion spectrum of most synthesized sounds that so readily imparts to the listener the **electronic cue and lifeless quality**." (John Chowning, 1977. *The Synthesis of Complex Audio Spectra by Means of Frequency Modulation:* 46).

“What can be learned in this process are those subtle attributes of natural spectra which so distinctively separate them from most synthesized spectra and which can then be applied to **the unknown, "composed" timbral space** with the result of a vastly enriched domain in which the composer can work.” (ibid.: 54)

# Technological Ecology - “Welcome the stranger”

“**The clash of quantitative and qualitative**, of number and sound, of abstraction and sensuous perception, allows the encounter of theory and praxis, concept and experience.” (Agostino Di Scipio, 2002, *Systems of Embers, Dust, and Clouds*: 30)

“It is the perception of something present that makes us sense, by way of its difference, a hitherto unrealized lack of knowledge that leaves us uprooted and a stranger to the ‘‘here and now.’’ It implies a kind of breakdown, but an existential and even ontological one**.**“ (ibid)

*Words of a posthuman…*

Google DeepMind – WaveNet
Examples of the neural network synthesis algorithm trained without text sequence – it makes up its own speech.
https://deepmind.com/blog/wavenet-generative-model-raw-audio/

# Noise and the unnatural

Marie Thompson, 2017, *Beyond Unwanted Sound: Noise, Affect and Aesthetic Moralism.*

“Noise is often associated with ‘unnatural’ sound sources – namely, machines and technological artefacts […] Unlike the distinguishable and clear sounds of the rural soundscape, the new, ‘unnatural’ noises of the factory and the machine are complex, disordered and irregular.” (26)

# The Listening Interface

Functional interface: serves a purpose, disappears (acousmatic veil).

Realisational interface:

"brings with it the possibility of continuously realizing new encounters and uses, and, in the process, of re-determining the relationship between technical objects and their human subjects."

(Newton Armstrong, 2006, *An Enactive Approach to Digital Musical Instrument Design:* 42)

# Extended Technological Listening

“When perception proceeds in an unproblematic way, we are usually unaware of the sensory aspect of the stimulus information, and are only attuned to the events that are specified by stimulus structure. But when that relationship is problematic, the stimulus structure itself can become more evident.” (Eric Clarke, *Ways of Listening:* 32)

Jean-Claude Risset, about Sherpard tones and the endless glissando:

"such oddities reflect the mechanisms of pitch perception.” (1985, *Composers and the Computer*, ed. Curtis Roads: 125)

# Extended Technological Listening

E.g.

Maryanne Amacher: Otoacoustics – listener's auditory distortion products are part of the music. Technology of listening is revealed.

Agostino Di Scipio: Audible ecosystems – cause and effect, listener and maker are brought together in one self-organized feedback system. Listening is circular and incorporates technology.

# Sound objects do not precede intra-actions

*"A phenomenon is a specific intra-action of an "object" and the "measuring agencies"*; the object and the measuring agencies emerge from, rather than precede, the intra-action that produces them. Crucially, then, **we should understand phenomena not as objects-in-themselves, or as perceived objects (in the Kantian or phenomenological sense), but as specific intra-actions. Because the basis of this ontology is a fundamental inseparability, it cuts across any Kantian noumena-phenomena distinction: there are no determinately bounded or properties entities existing "behind" or as the causes of phenomena.**" (Karen Barad, *Meeting the Universe Halfway,* 128)

# Multidirectional sonic chain reactions

Transductions

Agencies

Subjective technology

# Intra-faces of sound

Localities in the sonic chain.

# Synthetic Registers

Mechanical register

Agential register

Bodily register

Situated register

Morphogenic register

# Syntheses as Becomings

Deleuze and Guattari, *A Thousand Plateus*

"The painter and musician do not imitate the animal, they become-animal at the same time as the animal becomes what they willed, at the deepest level of their concord with Nature. Becoming is always double, that which one becomes becomes no less than the one that becomes – block is formed, essentially mobile, never in equilibrium. [….] Becoming is never imitating. When Hitchcock does birds, he does not reproduce birds calls, he produces electronic sound like a field of intensities or a wave of vibrations, a continuous variation, like a terrible threat welling up inside us." *(*p. 355)

Synthetic agency as entanglement.

Non-duality of cause and effect. Merging the poietic and the esthesic (Nattiez, 1990).

Alien sonorities: welcome the stranger, the synthetic other.