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The disembodiment of the utterance

Speech, Music and the loss of the sense for proportionality

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a) Introduction

Ladies and gentlemen,

Today I would like to speak about the cornerstone for any and every historical reflection on the disembodiment of the utterance: The loss of the sense for the constitutive proportionality between sound and hearing. In the next twenty minutes, I would like to invite you to listen in to a conversation between me and an old lady, a friend of mine who stuck my nose right into the blind spot of most scholarly reflections on speaking and music-making: the historicity of the idea that speech and music can be thought of independently from a listener.

Muska Nagel from Munich, has for over fifty years been known as Mother Jerome. She lives in a Benedictine convent in Connecticut, and was born, as she emphasizes, not only pre-pollution but also pre-telecommunication. She enjoys telling me how she waved to the Kaiser as a child; and when she talks about the world war, you have to ask which one. A particularly unforgettable experience from this time was the childlike horror that befell her when her mother held the telephone receiver to her ear for the first time. She heard the voice of her father, whom she knew to be in Vienna only yesterday, and now was apparently shrunk and stuck inside a wooden ear trumpet.

Mother Jerome confessed to me on the telephone that since then she has always felt slightly uncomfortable when she hears a voice speaking to her without the speaker being present. For her, the act of telephoning transforms the sound of the voice, by which a person becomes the speaker into a placeless and faceless artifact. Of course, later in the years of her youth, Mother Jerome often picked up the phone to exchange brief messages with her friends. But chatting or conducting a scholarly or civilized conversation on the telephone was unthinkable in her aristocratic family in the Weimar Republic. People who wanted to converse together only did so face to face.

Nearly fifty years of Plainchant has turned Mother Jerome's discomfort into a deep aversion against "telecommunication," the placeless and faceless exchange of sound waves. Seven times a day, her small group of nuns meets in the convent's wooden chapel to chant the old Gregorian songs. For Mother Jerome, singing and speaking are activities constituting a speaking or music-making "I". A person that is always and necessarily oriented towards another person. Speaking is always speaking to somebody, that is, addressing someone. Likewise, singing Gregorian hymns is analogous to speaking to a listener. For Mother Jerome, listening is an activity that cannot be separated from the persons who sing.

What Mother Jerome describes as fundamental for Plainchant in her convent is hard for me to understand today. As a musician, telephone caller, or as a microphone-bearing speaker, I mostly experience music-making and speaking as forms of producing or consuming technogenic sounds. I cannot but imagine Muska's voice or the sounds of my music-making friends

as something that can be saved, reproduced, and technically manipulated. Speaking, claimed the cultural critic Ivan Illich in 1992, has become faceless and placeless in the age of communication: "The word that issues as an articulation of the speaker's, and correspondingly of the auditor's *soma* (flesh) is now routinely identified with the phonetic sign managed as a message. This disembodiment of the utterance has led to a profound neglect for its place-engendering power, its topogenic fecundity of the voice. 'Speaker' can make their displaced voices omnipresent in a space of any size. But only the *viva vox* has the power to engender the shell within which speaker and audience are in the locality of their encounter" [Illich 1992].[1] This *viva vox*, the living voice, which, for Muska, is the quintessence of Plainchant, has been submerged today by the media management of sound.

My Conversations with Mother Jerome on her experience of music and speech as inseparable from place and person has shown me the depth of the chasm that separates our two horizons of experience. In the presence of her choir in the convent, I grope towards an experience of music; of listening that is foreign to me as a modern musician. On the other hand, I find it difficult to try to explain to a woman who has internalized fifty years of Gregorian chant what it is I experience when I am in the studio or on the stage as a drummer. How can I explain to her that I have drummed to the sounds of previously recorded Nepalese shamans or accompanied the sampled smacking noises of fat-sucking machines during an American plastic surgery. And how can I explain to her what has become an everyday experience for me - that this music is played not only by me and other musicians on the stage or in the studio, but also can be heard as canned music in discotheques or the mans bathroom.

b) The "embodied" sound: on the proportionality between sound and hearing

The German physiologist Hermann von Helmholtz helped me to understand the historical genesis of this epochal break: The heterogeneity of Mother Jerome's experience of a constitutive relationship between what is heard and what is sounded and my matter-of-course dealings with displaced sounds. His work *On the Sensations of Tone* from 1863 epitomizes the break between two different mental and sensorial topologies, which still manifests itself today in Mother Jerome's and my different "sound experiences."

This work, almost 600 pages, on the physical, physiological, and psychological foundations of music ranks, at least for German musicologists, among the standard works of their discipline. Repeatedly celebrated since its publication as the founding charter of music research based on scientific methods, it is never omitted from any introduction to musicology. I tried to explain to Mother Jerome that the same treatise that is fundamental in musicology sounded the death knell to the understanding of speaking, music-making, and hearing as activities rooted in the constitutive relationship between listener and speaker or a musician and his audience.

Until the 19th century, the meaning of fundamental musical terms such as 'tone', 'consonance' and 'hearing' was founded on two pillars, which were mutually constitutive: Tradition and sensual experience. Helmholtz was the first one who gave these fundamental terms a scientific, namely acoustical meaning. He claimed that the ear does not reveal the nature of what is

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[1] Illich, Ivan (1992). The environmental threat to the survival of the voice (Unpublished manuscript). Published as ' Le haut-parleur sur le clocher et le minaret, in: La perte des sens. Paris, Fayard 2002, pp. 121-144.

heard. For him a 'tone' consists of numerous partials that can only be partly perceived with the ear. Hearing, he stated, was not an intentional activity, but the registration of sound waves by a physiological apparatus. And what outraged contemporary musicians and musical scholars most was that: he did away with the qualitative distinction between consonance and dissonance. Last but not least, he defined 'sound', no matter if music, language or noise, as a scientific object independent from a speaker or musical instrument. Under Helmholtz, sound became something that can be synthesized and arbitrarily manipulated. In the acoustical laboratory, the heterogeneity between a violin, a human voice and a steam engine was reduced to graded differences in the shape of sound waves.

In order to understand the deep chasm that now separates Muska Nagel from a drummer in 2004, it is crucial to go beyond the watershed that divides these two mental topologies. As a modern musician shaped by Helmholtz axioms and its technological fallout such as the telephone and the phonograph, I do not have the privilege of being born pre-telecommunication as Mother Jerome and also not the possibility to keep my senses away from mediated sounds through the daily practice of Gregorian chant. On the contrary: By making music as well as by working as a musicologist I am trained to internalize the division between the utterance and the speaker, the musician and his music. The daily experience of placeless and faceless voices and melodies, be it technically optimizing the sound of my taped belly-dance drumming or listening to a CD of Monterverdi in the class room, hinders me from grasping the incomparability between disembodied scientific constructs and experienced proportions. I can therefore easily fall into the trap to project my own pop-science assumptions into an epoch where the constitutive complementarity between sound and hearing was still "common sense."

To avoid being trapped, I have to go back to where Helmholtz starts; to Pythagoras; to get a clear notion of what was meant by the proportionality of hearing and sound; of the bond between the listener and the speaker. Pythagoras discovered that the musical consonances of the octave, fifth, and fourth correspond to the proportions 2:1, 3:2, and 4:3. The monochord, an elongated, rectangular box strung with a string, and randomly divided by a bridge, was used for centuries to demonstrate one certainty: That the string ratios mirror a universal cosmic harmony. Alan Towey stresses that hearing and sound were attuned to each other. The same analogy that constitutes the cosmic harmony between two tones also constituted the bond between hearing and sound: „This view that all perceptibles can be defined as proportions reflects the impact made by the then recent discovery (...) that certain pairs of musical notes which mix together to produce (...) a consonance can be expressed as proportions of simple rational numbers.(…). Yet, Aristotle takes the idea further. At one point in his explanation of perception he is prepared to describe the sense, as well as the sense object, as a proportion. (...) The theory he offers in explanation is based on the idea that any sense faculty is itself a proportion or blend in the way that two mixed musical notes are blended to make a third note. (...)" (Towey 1991, 8–9). Aristotle understood the *intentio*, the sensorial anticipation of the heard, to be analogous with the string ratios on the monochord, that is, as proportional.

This understanding of sound and hearing illustrates a type of reflection on and experience of "world" that finds a universal resonance up to the eighteenth century: the experience of one's world as a meaningful tapestry of lived relationships. Musicians, philosophers, architects, physicians and politicians all considered proportionality, the art of proper dimensions, to be the basis of beauty, health, justice, and consonance. Whether the Pythagorean theory of musical consonances, the Galenic art of restoring the proper ratio of the body's juices, the ability

to build a beautiful building or to achieve a balance between the interests of a state; all these rested on the principle of proportionality. In this dense filiation of correspondences, a tone or utterance existing outside the relation to a listener was inconceivable, and thus literally "non-sense."

'Sound is whatever is perceived by hearing'. This statement of Johannes Tinctoris 's *Terminorum musicae* from 1495 exemplifies that the mutually constitutive relation between hearing and utterance was still "common sense" among musicians in the fifteenth century. With the 17th century this certainty became fragile. Natural philosophers such as Marin Mersenne, Robert Hooke, and Joseph Sauveur no less than the anatomist Domenico Cotugno paved the way for the understanding of sound and hearing as independent scientific objects. But until the 19th century musicians still trusted their senses and neglected the results of acoustical research that were not attuned to their own experience.

c) Sound and hearing as scientific objects

Helmholtz's on the contrary had a deep distrust in his sense perception. Physiological research demonstrated that hearing only partially perceived the sounds that are produced. Mother Jerome's belief that what was heard corresponds to the sound made was universally valid up through the eighteenth century. What she perceives today was for the acoustician Helmholtz the deceptive subjectivity of sensorial perception, which he, like many late-nineteenth century scientists countered with an objective knowledge based on scientific instruments. For Helmholtz, the laboratory research with its instrumental experiments had become the *conditio sine qua non* for investigating the bases of hearing, language, and music.

Helmholtz employed various methods to explain to his readers his acoustical style of thinking and way of perceiving as the key to understanding music. During his lifetime, musicians, philosophers, music scholars, and other laymen generally considered acoustics to be irrelevant for their arts. Therefore, Helmholtz obliged his readers to learn cognitively and sensorially how acousticians think and perceive. By instructing his readers in how to carry out simple acoustic experiments, he was teaching them to use their ears like an acoustician, that is, to treat their ears as an objective scientific instrument. By changing the way his readers thought and perceived, Helmholtz hoped that musicians and music scholars would change their negative attitude towards acoustics, and to understand the foundation of his theory of tone sensations: First, sound and ear are two scientific objects independent of each other. Second, as a scientific object, sound can be synthesized and improved, recorded and taped and arbitrarily played wherever one likes.

d) Conclusion: How the laboratory experience of sound and hearing became ordinary

Shortly after *On the Sensations of Tone* was published, other natural scientists and music scholars tried to turn this heavy intellectual fare into something more easily digestible. Physicists like Ernst Mach and Felix Auerbach wrote popular scientific treatises on Helmholtz's theory of tone sensations. Ten years after the first edition had appeared, Helmholtz's acoustic definitions dominated musical lexicons. The musical notion of 'musical hearing' was replaced by a physiological definition of the ear as a scientific object. And also its counterpart 'tone' was no longer explained as 'musical' but simply as a periodic vibration.

This internalization of the scientific constructs of ear and sound, which Helmholtz had to carry out mostly by theoretical means, happens today through media production and "sound" reception via the telephone or other media transmitting or processing sound waves. This training in the separation of sound and ear has resulted in a disembodiment of the sense for the proportion between sound and hearing. They continue to school me into ways of thinking and perceiving that makes it difficult for me to empathize with the proportional experience of speaking and music of a medieval music scholar or an 96-year old Benedictine nun.

The telephone, this became clear to Muska and me, is an apparatus that seemingly connects us over continents while we speak - but separates our experience of hearing, speaking, and making music in a historically unprecedented manner. But now we must hang up, she has ended the conversation. The bells are ringing for the Divine Praises. She now must answer the summons of another calling; one she will carry out with her fellow nuns in the hope not only for listeners but also to be heard.