## Glossary:

The following list of terms includes those that have become standard in the fields of sound studies and acoustics, but might need clarification for non-specialised readers. Furthermore, the list also carries neologisms, depicted in italics, that either others or I have created to indicate specific practices and/or to give newly created technological components, such as software or custom-built musical instruments, as well as compositions a name.

Acousmatic: Pertaining to sound the source of which is invisible. One hears a sound without seeing the way it is produced. The best example for an *acousmatic* situation is listening to the sound coming from the telephone or the radio. An example for an *acousmatic* voice is the recorded voice being played back from any source, such as tape, LP or CD, and being disseminated through loudspeakers. Tracing back to the disciples of Pythagoras called *akusmatikoi*, the term was coined by French composer, music and sound philosopher Pierre Schaeffer (1910–1995) and his seminal *Traité des Objets Musicaux* (1966). Followers of his, French composers, such as Michel Chion or François Bayle, continued to use the term so that in the meantime it has become standard among the international community of electroacoustic music. It is interesting to note that already, five hundred years BC, Pythagoras was convinced that the sense of hearing provides stronger focus on the subject matter than the visual one. Therefore, as a rule, during the first five years studying with him, the pupils could only listen to his voice since he gave his lectures from behind a curtain. This way, he believed, the students are more concentrated since they are not distracted by the visual sense. He was convinced that the sense of hearing provides stronger focus on any subject matter than the gaze from the eyes (See Dolar, *A Voice and Nothing More*, 2006, pp. 60–71).

Aural: As opposed to the visual sense, *aural* is that of or relating to the ear or to the sense of hearing.

*Chi-ha-ucciso-Il-Conte?*: Pseudonym of living Venice-based, Italian designer responsible for developing the housings for the black hand controllers of the strophonion, being a backup for the original wooden versions made by Florian Goettke. *Chi-ha-ucciso-Il-Conte?* studied the original controllers, refined their ergonomics and finally assembled them based on a number of 3D printed pieces that he prepared.

*Corporalogy*: The logic of movements. I propose this term to designate the logics of moving and should not be confused with choreography which takes place later as a form of 'dance-writing' involving some sort of conceptual thinking. *Corporalogy*, on the other hand, should indicate that it is the body itself that triggers a motion and, from there, creates a sequence of movements as opposed to someone else or even oneself telling the body which way to move. During the process of creating a sequence of movements, without choreographic intention, the dancer develops and applies a vocabulary and grammar of moving that creates, follows and establishes its own logic. It is obvious, but nevertheless worth mentioning that this way of reasoning is beyond any linguistic signification or verbal semantics. The term *logic*, however, traces back to the Greek *logos* meaning 'word' or 'speech'. As a consequence, for more than two thousand years, reasoning in Western culture

has mostly been related to language and its semiotics producing the predominance of the word and binary thinking over embodied knowledge (Lakoff, *Philosophy in the Flesh*, 1999).

Disembodied: Indicating the detachment from the body. Thus a *disembodied voice* is also an *acousmatic* one.

DMI: Abbreviation for 'Digital Musical Instrument'.

GUI: Abbreviation for 'Graphical User Interface' that allows one to interact, usually, with electronic devices. However, any software application that is presented and displayed on the screen of the computer, tablet or mobile phone, is called GUI.

*Glui*: A neologism—apparently a merge of glue and GUI—is the name for a Berlin-based organisation and platform for custom technology for musicians and artists run by designer of musical instruments, Sukandar Kartadinata. 'Glui was devised in Berlin around 1997 by Nic Collins and Sukandar Kartadinata as a new node on the music & technology grid following their joint work during the mid-nineties at STEIM.' After Collins moved to Chicago in 1999 heading the Sound Department at the School of the Art Institute of Chicago (SAIC), Kartadinata runs the platform as independent instrument maker. For more information see http://www.glui.de/wp/ [last accessed 20 January 2019]. During summer 2014 Kartadinata assembled and programmed the electronics for the second pair of hand controllers of the strophonion, whose black-coloured housings were built by Italian designer *Chi-ha-ucciso-Il-Conte?* based on the original, wooden version fabricated by visual artist and former violin maker Florian Goettke. See http://www.glui.de/wp/?page_id=597 [last accessed 20 January 2019] and https://econtact.ca/18_3/nowitz_strophonion.html [last accessed 20 January 2019]. Furthermore, but no less importantly, over the period of three years from 2015 through to 2018, based on audio processing software *Max/MSP*, Kartadinata programmed the second version of the strophonion premiered on 4 February 2018 as part of the performance *Haunted Territories* by Alex Nowitz and Florencia Lamarca presented in Studio A of RADIALSYSTEM Berlin. See https://radialsystem.de/programme/47323/163513/ [last accessed 20 January 2019].

HCI: Abbreviation for 'Human-Computer Interaction'.

*JunXion*: Connectivity software that, for the further use in audio and video processing applications, detects and collects incoming data from game controllers, audio and video devices and a variety of sensors, such as microphones, ultrasonic distance sensor, 3D-acccelerometers, etc. *JunXion* translates the information of continuous data stream to be further used by devices based on MIDI or OSC. This, for example, allows the control of musical parameters, such as volume, pitch, frequencies, velocities, etc., but might as well be used for live controlled video manipulations. *JunXion* was developed by long-time director of STEIM, Michel Waisvisz (1949–2008), and programmer of audio applications, Frank Baldé (1956–) who at the current point in time continues developing and updating the software according to the operating systems of Mac computers. The STEIM website provides further in-depth information on the current version announcing that 'junXion v5 is a Mac OSX data routing application that can process 'sensors' from any HID (joysticks, mice, touchscreens), MIDI, OSC, Audio, Arduino and Video device using conditional processing and remapping, with MIDI or OSC events as its output.

This resulting MIDI or OSC data is then available to any audio or music software that runs on that Mac or can be send to external MIDI/OSC devices', in http://steim.org/product/junxion/ [last accessed 20 January 2019]. *JunXion* was used in the *stimmflieger*, performed in public from 2007 through to 2013, and the first version of the *strophonion*, performed in public from 2011 to 2017.

Kargyraa: Harmonic singing technique or throat singing technique from Mongolia. It is believed that not the vocal cords, but the so-called vestibular fold is responsible to produce low-tone singing tones that the 'natural' singing voice from the West is not able to generate.

*LiSa*: Abbreviation for *live sampling*. *LiSa* is an audio processing software allowing the instant playback of live recorded material. Similar to *junXion*, *LiSa* was created by Michel Waisvisz and Frank Baldé. Due to the Core Audio architecture of Mac computers starting from Mac OS 10.7, it became more complex and time-consuming to provide updates for *LiSa*. It was until 2012 that, for the community of *LiSa* users, Baldé could provide *LiSa* updates regarding the operating systems below and including MacOS 10.6. *LiSa* was used as part of the *stimmflieger* (2007–2013) and of the original version of the *strophonion* (2011–2017). However, since Baldé accompanied the development of this version until 2016, he still made some refinements not only on the configuration, but also on the software architecture of *LiSa*. In the meantime, based on the engine of *LiSa*, Baldé developed a more user-friendly sampling application called *RoSa*, short for 'Realtime OSC-controllable Sampling' published in 2013. For more information on *RoSa* see http://steim.org/product/rosa/ [last accessed 20 January 2019].

Live Sampling: In music the term indicates the immediate use of live recorded material.

*Max*: Also known as *Max/MSP* or *Max/MSP/Jitter* is a programming software for music and multimedia distributed by San Francisco-based software company Cycling '74. In the mid 1980s, Miller Puckette (1959–) developed the software at *IRCAM*, the *Institut de Recherche et Coordination Acoustique/Musique* (IRCAM) in Paris. The term *Max* refers to pioneer of computer music, Max Vernon Mathews (1926–2011). The term *MSP* alludes to both 'Max Signal Processing' and the initials of its creator Miller Smith Puckette who, after Cycling '74 acquired the rights for *Max*, developed a comparable, non-commercial programme called *Pd* (Pure Data). Miller Puckette teaches at the University of California, San Diego (UCSD).

MIDI: Developed in the 1980s, 'Musical Instrument Digital Interface' has become a standard communication protocol to connect and synchronise various different digital musical instruments, computer and other devices with each other.

Multivocal: According to the online dictionary of Merriam-Webster, it signifies 'many things' and is 'of manifold meanings', similar to the term 'equivocal'. The term used without hyphen is attributed to English poet, literary critic, philosopher and theologian Samuel Taylor Coleridge (1772–1834). See https://www.merriam-webster.com/dictionary/multivocal [last accessed 20 January 2019]. According to circumstances, I sometimes use the term *multivocal* to address or describe a matter possessing a manifold quality. But more important it is, I propose, to use the term in its literal meaning signifying 'many voices'.

*Musicking*: New Zealand-born musicologist, Christopher Small (1927-2011), coined the term to emphasise that music, rather process-related than just an object, involves many different levels of activities coming together, singing, playing, dancing, performing, composing, listening, etc., all of which have the social quality of bringing people together. '*To music is to take part, in any capacity, in a musical performance, whether by performing, by listening, by rehearsing or practicing, by providing material for performance (what is called composing), or by dancing.* We might at times even extend its meaning to what the person is doing who takes the tickets at the door or the hefty men who shift the piano and the drums or the roadies who set up the instruments and carry out the sound checks or the cleaners who clean up after everyone else has gone. They, too, are all contributing to the nature of the event that is a musical performance', in Small, *Musicking*, 1998, p. 9.

*Onomatopeoticus Rex*: 'The king of imitating sounds' is the title of my composition for voice and strophonion. 'Rex' is Latin meaning king. *Onomatopoetic* is derived from 'onomatopoeia' which traces back to Greek *onoma* meaning 'name' and *poiein* meaning 'to make'.

OSC: Abbreviation for 'Open Sound Control', similar to *MIDI*, is a communication protocol for networking sound synthesizers, computers, and other multimedia devices. See http://opensoundcontrol.org/introduction-osc [last accessed 20 January 2019]. Originally developed at UC Berkeley Center for New Music and Audio Technology (CNMAT), OSC continues to be a subject of ongoing research. See http://cnmat.berkeley.edu [last accessed 20 January 2019].

R&D: Research and Development.

Sampler: Digital musical instrument that records and plays back sound samples as opposed to the analogue synthesizer generating sound on its own through frequency control applying voltage-controlled oscillators (VCO).

Schizophonia: Derived from Greek *schizo* meaning 'split' and *phone* meaning both voice and sound, it signifies 'the split between an original sound and its electroacoustic reproduction'. In 1977 Murray Schafer came up with this 'nervous' term in order to address an 'aberrational effect of […] twentieth-century development'. He argues that 'original sounds are tied to the mechanisms that produce them' and that now, due to the technological invention of storing sound and playing it back, 'they may be restated at other times and places.' (Schafer, 1994, p. 273).

Soundscape: Sonic Environment. Emerging only in the 1970s of the twentieth century and attributed to Murray Schafer who is said to have used it for the first time, the term *soundscape* is an assemblage of the components *sound*, on the one hand, and *scape*, as derived from the word *landscape*, on the other. In this context it is worth noting that over centuries there exists a word to describe the environment in visual terms, but not so with the hearing sense. This is just one, but a good example that showcases the visual predominance over the audible in Western cultures.

STEIM: Abbreviation for 'STudio for Electro-Instrumental Music', a Dutch foundation based in Amsterdam to research and develop new musical instruments for musicians and performing artists. STEIM was founded in the late 1960s by a group of composers and musicians, such as Louis Andriessen and Misha Mengelberg. For more information on STEIM see http://steim.org/what-is-steim/ [last accessed 20 January 2019].

*Stimmflieger*: Musical instrument based on wireless, sensor and computer technology using two Wii remotes. The *stimmflieger* belongs to the instrument group of gesture-controlled live electronics. Based on STEIM software, the implemented configuration was mainly developed together with Swiss sound artist Daniel Schorno. The *stimmflieger* is the first instrument that I could develop at STEIM starting in autumn 2007 until 2010. The instrument's name is a German neologism that can be translated into English as 'voice kite'. Similar to flying a kite, the name refers to the way it is played. The *stimmflieger* consists of computer, STEIM software (junXion, LiSa), analogue-to-digital interface and two Wii remotes, i.e., wireless controllers taken from the Nintendo game station. For more information see the article Alex Nowitz, 'Voice and Live-Electronics using Remotes as Gestural Controllers', in *eContact! 10.4* (October 2008), http://econtact.ca/10_4/nowitz_voicelive.html [last accessed 10 January 2019]. In 2009, during the ISCM (International Society for Contemporary Music) in Gothenburg, I performed the composition *Minotaurus*, for voice and *stimmflieger*, which won the first prize of the ECPNM (European Conference of Promoters of New Music).

*Strophonion*: Musical instrument based on wireless, sensor and computer technology using custom remote controllers developed and built at STEIM. The *strophonion* belongs to the instrument group of gesture-controlled live electronics. The instrument's name is a neologism composed of three Greek terms alluding to the way it is played: *Strophe* means 'turning, rotating, twisting' and alludes to the way the right hand moves when playing its right hand controller. *Phone* means 'voice, sound'. The term *strophonion* is completed by the affix *ion* that, signifying an 'atom bearing electrical charge', refers to the movement vocabulary of the left hand when playing its left hand controller, which recalls the way of playing the 'accord-ion'. It was over the period of two years, from 2010 through to 2011, that the hardware of the *strophonion*, that is, the hand controller system was developed by myself in very close collaboration with the developing team at STEIM, particularly Frank Baldé (software configuration), Florian Goettke (ergonomics and design), Byunjun Kwon (electronics), Dj Sniff (project manager). Constantly refining and adjusting the instrument's software using junXion and LiSa, the development of the original version as programmed and implemented by Baldé, ended in 2016. In 2014 a second pair of hand controllers was fabricated by Italian designer *Chi-ha-ucciso-Il-Conte?*. The electronics were assembled by Berlin-based instrument maker, Sukandar Kartadinata. Additionally, over the period of three years from 2015 through to 2018, supported by the PhD project *Monsters I Love*, Kartadinata developed and programmed a new intricate software configuration for the *strophonion* based on the audio processing software Max 7. This marks the second generation of the instrument due the resulting sound difference in comparison to the former version based on STEIM software. For more in-depth information on conceptual ideas and development until the end of 2016, see the article Alex Nowitz, 'Designing and Playing the Strophonion: Extending vocal art performance using a custom digital musicalinstrument', in *eContact! 18.3* (December 2016), http://econtact.ca/18_3/nowitz_strophonion.html [last accessed 7 Jan. 2019].

*Vocalogy*: The logic of using the voice as sound source, purely on the basis of its sonic capacities. This includes all kinds of utterances and singing types, but disregards linguistic meanings or implications. Proposing this term is my attempt to indicate that during the process of vocal improvisation the performer develops and applies a sonically inherent vocabulary and grammar that, based only on the sounds of the voice, creates, follows and establishes its own logic while, at the same time, one aims to waive linguistic meaning. I pointed to this before defining the term 'corporalogy'. But in this context it is even more important to highlight that the term 'logic' traces back to the Greek *logos* meaning 'word' or 'speech', which has become equivalent to reasoning. Until the present time, reasoning and, in a broader sense, philosophy has been practiced only by verbal means and written accounts, but not very often through other possible forms of expression, communication and perception. Western philosophy seems to be entangled in language and its semiotics. In contrast, the vocal performance artist thinks by means of an embodied knowledge within the logic of the field and in one's own terms. Getting a sense for a *vocalogical* approach and presenting it to an audience is, despite of all precursors in the field, always a challenging task due to the predominance of the spoken and written word in Western culture being favoured over the sound qualities of the voice. But the use and understanding of the voice that doesn't only belong to the realm of speech and reasoning, opens up another one, that of sound. As a result, the hearing sense comes to the fore. In contrast to 'causal' and 'semantic listening', this is called by Michel Chion and others 'reduced' or 'acousmatic listening' (Chion, *Audio-Vision*, 1994, p. 223). The emphasis on vocal sounds requires, from both emitter (vocal performer) and receiver (listener), to focus on the sound itself (pitch, timbre, rhythmical qualities, etc.). Even more so, I claim, when pursuing a *vocalogical* practice, one needs to develop intensified multi-modal listening capabilities. This includes reduced listening, listening to the body as well as interactive listening, which is listening to co-performers or even to an audience and acting correspondingly.

*Voice-induced sound dance* or *Vocal sound dance*: Originally coined in German as 'stimminduzierter' oder 'vokaler Klangtanz', I attempts to describe a novel performance practice resulting from the overlapping of three different performing practices: vocal, technological and bodily. Based on and using vocal material, the performer applies varied sampling techniques when playing gesture-controlled live electronics, such as the strophonion. In so doing, apart from vocal artistry as such, the performer needs to develop and practice an idiosyncratic movement vocabulary in order to steer and control sound and music. Bringing together the logics of each of the three disciplines—*vocalogy*, technology and *corporalogy*—forms the basis for *voice-induced* or *vocal sound dance*, but requires an equally balanced and interdependent thinking in and through the voice, the instrument and the body.