

Name: Steffen Alexander Schmidt (Dr. phil. habil.): Heart Cultures
Original Project Title: Signs of Life

Description and Report

The Project is driven by the idea of building bridges between medical and musical knowledge concerning heart sounds, embedded into a broad cultural perspective. While medical methods are focussing on pathological phenomenons, the question of the heart beat's groove is left to musical culture. There, it is just simplified in theoretical derivations of pulse, or left to the mechanical beat in pop music. Instead, the symbolic meaning is overwhelming, playing a big and important part of our culture. A more cultural reflected view of heart beats is investigated by visual artists.

Research Process.

The idea was originally thought of producing „Portraits of Heart Sounds“, following statements of visual artist Christian Boltanski and his projects on heart beats, which finally culminated into his „Archives du choeurs“ (2010): Listening to your heart sound is like a last self portrait. (1)

The musical material, I wanted to work with, should come from real existing heart beats; from there a composition would be built around the heart sound material, to give the heart's owner a musical interpretation of his heart beat. On the other hand, the musical arrangement could give the physicians a more detailed sound analysis of the heart beat itself, by stressing musical pitch or rhythmic accents and percussive sound characteristics of the heart sounds and murmurs, to underline the acoustic anomaly, e.g. a holosystolic murmur of a mitral stenosis.

While collecting the heart sound material in the lab, I was working at (Research Lab at the Centre cardiovasculaire of the CHUV in Lausanne, Switzerland), I would have liked to discuss the medical perspective of listening to the heart with my own perspective of listening as a musician. From there, the musical arrangement should reflect the results of the interdisciplinary discussion.

This aim changed for several reasons. In my first approach I studied successfully medical auscultation through internet courses from online universities, mainly on mitral stenosis, opening snaps, third heart sounds etc. During my stay in the lab I became aware of how difficult it is to get valuable material of heart sounds. Doctors today in hospitals prefer to work with echocardiography which is an image giving method (although the images are derived from ultrasound). To record the results I had to be with the doctors during the Echo exams. From there I took the Doppler Sounds, which are the sound sources of the Echo. That was a strange discovery! The sound differs completely from the usual „lubdub“, which is received through the stethoscope or through phonocardiography, giving the information of the heart valves movements of opening and closing. So I studied the Echo's Doppler sounds, the different possibilities of filtering, and all the noises the machine produces by itself; and beside of that the phonocardiographic sound archives of the hospital, which contained material for didactic exercises. Physicians and surgeons in a hospital are very busy. So it was almost impossible to find someone to discuss the heart sounds in detail. And even if it happened, there was the problem of communication. It was very difficult to talk with doctors about their acoustic impressions and listening experiences. A language was missing, which only existed in the written papers.

Second, it was hard, even impossible, to receive a permission to ask patients for their individual heart sounds.

These incidents led me to a certain perspective, which is part of the AIL project: the identity of an artist, being inside and outside the same time. My further studies in sound walks and essays tried to reflect this hybrid position in between.

During my stay in the lab I studied different approaches: research on the polygraph for instance, and of the metaphorical significance of the heart in cultural science. This research led me to a huge transdisciplinary perspective between different sciences: Medical, biological, psychological, philosophical, musical and in general artistic approaches of the metaphorization of the heart beat. One of the most fascinating pieces in art is Bill Viola's

„Science of the Heart“ (1982). In this installation, the heart’s metaphorical meaning clashes with the physiological organ, bringing together the two separate forms of knowledge in a paradoxical situation. I discussed this with curator Carolyn de Wattenwyl, head of „Recontres Arts et Science“ at the CHUV, who introduced me into the work of visual artists like Boltanski and Viola.

While studying these different scientific and artistic approaches I made sound recordings of the hospital, documenting the environment of medical heart research. My aim was to produce a soundscape of the heart, or better, a soundwalk, which mirrors the sound world around the heart science, how it was managed through the canonic version of society’s privileged know how - a high tech hospital.

This soundwalk, which included my own recordings of the hospital’s intensive care, entrance hall, the doctor’s „visites“ at the patient etc. was edited, looped and recomposed through effects, to create a situation between objective noises and incidents on the one hand, and subjective perspectives on the other. This is not only a subjective walk through the hospital, but also a reflection of the AIL project’s setting, as I described above. The artist’s identity is a heterotopic place between the inner and outer perspective.

The soundwalk was planned as only one track of an entire performance with live piano. Performing the prerecorded sound walk with live piano, I could build relations to the „tonality“ and rhythms of the hospital’s sounds. Thanks to the collaboration of the Montreux Jazz Festival this soundwalk could be first performed on „Didactica“ in July 2011. The performance was very special. I asked the lab’s head, Prof. Dr. L.K. v. Segesser to join the performance with his echocardiogram, performing its noises and sounds, which can be amplified through a PA. In agreeing with this idea, v. Segesser contributed to a premiere of the maybe most bizarre trio on the festival: 1) prerecorded soundwalk, 2) live piano and 3) live Echocardiogram.

After the successful premiere I had several possibilities to repeat the performance, but without Prof. Segesser and his Echo. In a San Francisco Performance, made possible by Aurelie Coulon and Swissnex in May 2013, I developed a version of the sound walk with live percussion. In this performance, the noises, I produced live with an empty paper box and a plastic bottle, should underline the compositional structure from the soundwalk and produce sonic similarities with the heart sound material. The aim here again was to produce a space between inner and outer perception. In the San Francisco performance I could also work with a live heart sound, which was given by Aurelie. We could finally repeat this live heart sound performance in September 2014 during a performance of the Musée de la main in Lausanne.

Methods - From Sound Walk to Sound Essay

Since the research period in the lab (3/11 to 11/11) the performance is in a steady process. The soundwalk is developing more to a ‚sound essay‘, a composed imaginary discussion-construction between different arts and sciences. The heart sounds themselves become more and more sound designed artefacts, like electronic beats.

At the end of my stay in the lab, the different cultural codes of the heart became more important. I started integrating different sonic and aesthetic representations of the heart, dealing with E.A. Poe’s „Tell Tale Heart“ and Schubert’s Lied „Gretchen am Spinnrade“, as well as Michael Jackson’s beginning of „Smooth Criminal“ and Kraftwerk’s „Electrocardiogram“ from „Tour de France“. Ole Hoystad’s „Kulturgeschichte des Herzens“ became a central theoretical issue. My method of research was a picking up of aspects from different disciplines, documenting them in a research diary and confronting them with the sound diary I made during my stay in the lab.

The soundwalk I produced there, was thus developing into a sound essay. Taking the idea from Chris Marker’s „Sans Soleil“ Film essay (1982) where he contributes to the philosophy of time perception under a Dionysian aesthetic concept, I planned a two part piece of app. 20 min length, in which the musical question of inner and outer perception was focussed. The first part should follow the „classical“ concept of a soundwalk. It reflects my path to and

through the hospital, starting in the Metro of Lausanne and leaving the hospital with the ambulance helicopter. After having passed the entrance hall with its strange kind of muzak (which is subjectively marked through a distortion effect to reflect my own critical point of view), I arrive at the sixth floor to change my dress, which also gives a different identity, becoming a part of the hospital's staff. This critical transition of taking another hybrid identity between inside collaborator and outside artist is marked by a looping of sounds of the dress machines, which suddenly trespasses the quality from noise to music.

This short description of the first part of the soundwalk should explain my method of building up the narrative structure between sound and space, to create an imaginary sound architecture, shifting between objective noise and subjective sound.

In the second part I enter the lab (elevator, opening door, starting the computer, noises of writing on the keyboard), which opens the numerous relations, linked with heart culture in the online world: a scientific introduction into the anatomy of the heart is heard, counterpointed by E. A. Poe's „Tell Tale Heart“ and sonic representations of the heart (stethoscope sounds and Echo sounds). A major role plays the 3 D printer of artificial hearts, which are produced in the lab. This amazing machine has 2 motors, which behave like 2 different voices of a bizarre musical instrument. It played in the background while I was writing my research diary. I took many recordings of this strange musical instrument.

In this second part I collect many different perspectives of the heart sound (very freely in rhapsodic form of a Fantasia and not systematically built). The middle part reflects different heart sounds, I've found in the hospital, through the musical technique of a fugue. The end of this second part returns to the idea of a soundwalk, leaving the hospital through the sound of a helicopter. The helicopter is very crucial in urgent situations of heart transplantation.

This second part is not purely a soundwalk, although beginning and end are representing its gesture; but it approaches more to a sound essay, by entering into the imaginary discussion of the different scientific and artistic perspectives of heart cultures.

It is just a beginning, a first approach to a huge phenomenon, which is relevant in all fields of high and everyday culture. Through the dimension of sound, the essay form reflects in my opinion the best way of entering into the world between inner and outer perception, which was a central aspect of the whole AIL project, as well, as the conflict in perception in general, between objective and subjective. This might be just an illusion, because our whole perception is taken from an inside perspective. But one should consider, that sounds and noises from the outside world have more objective relevance for the communication than music. We can follow this difference very clearly in film science, where sound design is a part of the film, while music („score music“) has always the status of a comment outside the film.

Transdisciplinary Art

It would be (in my opinion) a very fruitful interdisciplinary or transdisciplinary research field to develop and investigate the symbolizing strategies of the heart in different sciences and arts, to compare phenomenons from different sights and to find a language, which communicates the different approaches. First steps of networking have been made in this research, to build up a research cluster, with little results by now.

Especially in music theory and history there is an interesting analogy between the heart sound and the birth of motif thinking and thorough bass, two very important issues of baroque and classical music from 17th century on to the early 20th century. One could claim, that there is a strong analogy to the heart sound. Music, representing the affect, has not only built up emotional signs through musical representations like pitch gestures („Musikalische Figuren“) or major / minor scales, but also by imitating the physiological functions of the body, which represent the affect by themselves: Tempo, rhythm, measure, character and at least frequency. It is striking that the ideal, neutral heart sound is almost identical with the so called „folk tune fourth“, an upbeat jump from the dominant to the accented tonic, as one can hear it in Mozart's „Kleine Nachtmusik“, or in the bass line of the piano in Schubert's Lied

„Gretchen am Spinnrad“ after Goethe’s poem. The meaning of the words „Mein Herz ist schwer“ is translated into the bass line, giving the drive of the expressed unquietness. Music since 1700 hence would express an invisible body language, which is immensely linked to the emotional representation of the body: Breathing and heart beat. But it is not expressed through dance, but through the inner movement, as if amplified and acoustically symbolized, which describes an idealistic place between the immaterial soul and the visual gesture.

As a musicologist and cultural scientist this project has led me to a new aspect of musical ontology and to transdisciplinary perspectives. As a composer and musician I developed the format of the sound essay, which seems the only adequate way to thematize the above described phenomena of the perceptive tension between inner and outer space. It might also work as a certain prototype of artistic research.

I would like to finish with a statement of heart’s function in counter culture.

As we can see in many artistic pieces of literature, music, etc. the heart has a certain meaning of signifying the truth. E.g. in Wackenroder / Tiecks „Herzensergiessungen eines kunstliebenden Klosterbruders“ (1796), it becomes clear already in the title, that there is a level of intimacy, which is not to be taken as an official statement, and that is at the same time the guarantee of the ‚real‘ truth. While the rational argument of a political debate, or the academic proof of a philosophical statement are ‚rotten‘ through their character of a corrupt rhetoric society, the chance to express something through the heart marks a place beyond. There, its symbolic meaning receives the value of a counter culture, in which also - or maybe especially - music takes a dominant role to transport this intimacy. Musical listening though cultivated a way to understand the intimacy of the true message. That might be one reason, why people don’t like to talk about musical matters. The most horrible and hysterical idea in Poe’s „Tell Tale Heart“ is, that intimacy becomes official. In the protagonist’s mind the Polygraph already exists - imaginary. It might be just a question of time, when a polygraphic function is implemented into future detectives equipment – maybe dressed in beautiful sounds, derived from the heart.

My research, which shows a development from a very clear musical idea, has led me to a huge project of interdisciplinary approach; and it led me to the attitude being careful with the connections one can build with knowledge. That is the reason why I changed the project’s title from „Signs of Life“ to „Sonic representations of the heart“ and finally to „Cultures of the Heart“. The very first and very important step of a serious scientific approach would be to become clear of the different cultural contexts, the heart beat is placed in. And it could lead to a different understanding of one’s body functions: To deal with the own heart beat would be a step to deliver the individual from the state of estrangement, which is supported by technical medical procedures. To experience the self, also the awareness of the heart beat was a serious value as a „pratique du soi“ in 18th century, as A. Metreaux has argued. The heart culture project should lead to a broader consciousness of the heart’s owner instead of dancing and behaving to a heart beat, given by medical and musical industry.

Notes / Bibliography

(1) On Boltanski:

http://www.deutschlandradiokultur.de/ein-herzschlag-fuer-die-ewigkeit.1013.de.html?dram:article_id=168296

(last visit: Jan. 3rd 2015)

Christine Attenhofer Jost / Emanuela Valsangiacomo Büchela:
Diagnostik bei kongenitalen Vitien: Stethoskop, Echokardiographie und / oder MRI? In:
Kardiovaskuläre Medizin 2006;9: 311–323

Claudia Benthien, Christoph Wulf (Hrsg): Körperteile. Eine kulturelle Anatomie. Rowohlt:
Reinbek bei Hamburg 2001

Henk Borgdorf: Die Debatte über Forschung in der Kunst, in: Künstlerische Forschung. Positionen und Perspektiven. Hg. v Anton Rey und Stephan Schöbi. Zürich 2009, S. 23-49

Paul Erne: Beyond auscultation – acoustic cardiography in the diagnosis and assessment of cardiac disease, in: Swiss medical weekly 2008; 138 (31–32): 439–452

Beate M. Herbert: Kardiosensibilität, Emotionsverarbeitung und Verhalten. München 2006

Ole Hoystad. Kulturgeschichte des Herzens. München 2005

Werner Friedrich Kümmel: Musik und Medizin, Freiburg München 1977

Jens Lachmund : Der abgehorchte Körper. Zur historischen Soziologie der medizinischen Untersuchung. Opladen 1997

Alexandre Métreaux: Rhythmen der Naturforschung und die Erforschung der Rhythmen, in: Barbara Naumann (Hg): Rhythmus. Zürich 2005

Mäkelä, M., Nimkulrat, N., Dash, D. P., & Nsenga, F.-X. (2011). On reflecting and making in artistic research. *Journal of Research Practice*, 7(1), Article E1. Retrieved [date of access], from <http://jrp.icaap.org/index.php/jrp/article/view/280/241>