

Projekt A.R.S. Art – Research -Sound CUPRAS - Cultural Practice of Sound in the context of Sound Art and Sound Research

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ABSTRACT

There has been a new research project on sound at the Johannes Gutenberg University Mainz since early 2018. A team of scientists and artists headed by Professor Peter Kiefer will examine aspects of sound research over a five-year period. One special feature of the project is its indepth link with artistic practice. The main focus here is on the researching artists' artistic approaches and exploratory questions – in the true meaning of 'artistic research'. On the occasion of *Global Composition 2018*, the key points of the kick-off phase of the A.R.S. project will be presented. Our desire is to discuss contact points to other participants, as well as explore possibilities for institutional and other collaborations.

BACKGROUND 1 - GUTENBERG RESEARCH COLLEGE

To present the institutional background, we will touch first upon the Gutenberg Research College (GRC), which was founded in 2007 as a central strategic instrument to promote research excellence at the Johannes Gutenberg University Mainz (JGU). The management board of the GRC is made up of excellent researchers from the JGU and non-university research institutions. The GRC has two functions: to advise the university administration and Senate on strategic issues related to research, and to support individual excellence by granting fellowships to outstanding scientists. The GRC Fellowship ensures each fellow top-class research conditions, and is granted to excellent external scientists, bringing them to Mainz, as well as to outstanding researchers at the JGU or cooperating institutions. <u>http://www.grc.uni-mainz.de</u>

Upon application of the rectorate of the School of Music, Prof. Peter Kiefer was granted such a GRC Fellowship in late 2017 for the A.R.S. Art-Research-Sound project. It enables him to devote himself, together with a small team of co-workers, to the topic of sound art and sound research over the next five years.



BACKGROUND 2 – ARTISTIC PRACTICE

Peter Kiefer has been working in the world of music and sounds for more than 40 years. His study of sounds initially related to the musical context (instrumentation, acoustics, timbres). This steadily expanded over time, however, and, growing beyond a concentration on electronic music, expanded to music/sound and noise in the medial context. Out of this arose an intensive examination of sound art. A transmedial art form, sound art arises by connecting the spatial and conceptual idea of visual arts with music and sounds. In the past 25 years, Kiefer has realised many of his own works as a sound artist in Germany and abroad, and has worked together with museums such as Kunsthalle Bonn, City Museum Helsinki and Kunsthalle Düsseldorf, as well as museums in Luxembourg, Bern, Basel and Paris. [2]

In 2004 he was the artistic director of the KLANGRAUM-RAUMKLANG festival in Cologne, where 17 international sound artists utilised different variants of spaces, from public space to gallery rooms, as well as offering two high-calibre symposia and a sound art concert series. A list of the names of the artists, composers, sound artists and theorists ranges from Alvin Curran, Karlheinz Stockhausen, Clarence Barlow, Pauline Oliveros to Tuvan overtone singer Sainkho Namtchylak and sound artist Christina Kubisch, in addition to many others.

"Klangräume der Kunst" [Sound Spaces for Art] (Kehrer, Heidelberg), a book based on the 2004 project that was edited by Kiefer and published in 2010; it is 384 pages long, and has 260 illustrations (all 4-colour) and a video DVD. It deals with the many different forms of sound art by internationally leading artists and scientists. The focus is on the concept of space. As a supplement to the otherwise prevalent approach emphasising the temporal component, in one chapter Kiefer places a new systematisation of sound art based on the concept of space up for discussion.



BACKGROUND 3 – SOUND ART COMPOSITION COURSE

After more than a decade of teaching at the Academy of Media Arts Cologne, Kiefer switched to the School of Music at the Johannes Gutenberg University Mainz. The master's degree course in sound art composition that he initiated there in 2010 enables students to study at a German college of music for a "Master of Music" in this field for the first time. The course of study is open to artists, musicians and others who would like to intensively grapple artistically with the area of sound art composition.

Since 2018, doctoral studies are also possible with a degree concluding with a concert exam or master class.

The course of studies is based on the newest developments of the intermediary understanding of music and art that has developed in the past two decades. One focus is on the sound of spaces – particularly public spaces. Here, trends in new music, electronic composition, sound art, audio-visual art and radiophone art, Ars Acustica, combine to form a thematic unity. At the highest artistic level, compositional approaches with a focus on making spatial and intermediary composition strategies are explored and further developed. These include the development of spatial sound installations and sound installations, as well as performative concepts and media representations.

https://www.musik.uni-mainz.de/studium/abteilungen/klangkunst-komposition/

THE A.R.S. ART - RESEARCH - SOUND PROJECT

In the development of his artistic work, inspired by contact to and interchange with scientists from other spheres of knowledge, Kiefer was increasingly more interested in everyday sounds. Here he was concerned with listening itself as an individual experience and in listening as a cultural technique that in various regions of the world has developed diverse possibilities to discover something about the world through auditory input. This is connected to a very strong interest in what we as beings can gain in knowledge through listening, what defines us, what listening means in a social context and what it reveals about society.

[3]

Kiefer endeavours in the process to include knowledge about the "culture of listening" in the discourse, beyond pure artistic experimentation.

In attempting to include knowledge and experience from other spheres of knowledge, he has experienced that at the moment they are still quite disparate, often oriented only towards specific individual aspects.

The concept of the 'sonic turn' or 'auditory turn' is not only a part of the discourse in the art world, but has been gaining in relevance in numerous areas in social and cultural sciences for several years. People are talking about an 'auditory anthropology' of 'auditory cultures of knowledge' in ethnology, archaeology, linguistics, ecology, musicology, art and media studies, etc. Within the course of this development, the general concept of music is expanded to include the aspect of sound in a comprehensive form; it is understood in its complexity between an abstract phenomenon and an actor shaping our environment. In the emerging field of media philosophy, characterised until now by a strong focus on the cinema, Bernd Herzogenrath, for instance, follows in his publication *Sonic Thinking* [4] an approach of expanding thinking to include precisely the area of sound. In so doing, perceptions of sound studies are to be readjusted by attempting not only to deliberate on sound [according to external criteria such as (cultural) significance], but rather to think with and through sound.

The title A.R.S. comprises and outlines the project approach; at the same time it functions as a kind of umbrella brand and wide-ranging heading for the parts of the project that already exist and that will be developed in the future. With the first word, 'art', it is proven that art – and, associated with that, the artist's stance – is the starting point of the reflections. 'Research' reflects the ambition to conduct scientific research at the level of current discourses. In this context, it goes without saying that the methods of art history, musicology and cultural studies have on the one hand a significant and essential role to play; on the other, however, the approach of a researching artist is understood and included as a research-related approach. The artist with an interest in knowledge poses questions to the world and then communicates his or her findings with means beyond text and language. Both forms of research are accepted as legitimate means to describe our world, and the much-discussed concept of 'artistic research' is used here in the project with its positive and knowledge-oriented connotations.

The last term – 'sound' – describes the field in which the scientific and artistic research is intended to take place: it's about the concept of KLANG, which can only inadequately be transcribed in the English language. First of all, "Klang" goes far beyond the meaning of sound or timbre in music. In the A.R.S. project, "Klang" describes all vibration phenomena that can be experienced by us as humans or by other living beings, going beyond pure auditory perception with our ears. This includes ultrasound as well as infrasound, in addition to vibrations in different distribution media and solid bodies in all conceivable conditions of spatial distribution.

CUPRAS - CULTURAL PRACTICE OF SOUND IN THE CONTEXT OF SOUND ART AND SOUND RESEARCH

CUPRAS is the acronym for a sub-project in the general A.R.S. project which has constituted the main component of our work and research from the outset and continues to do so.

Under the umbrella term 'sound studies' as part of cultural studies, a lot of outstanding work has already been done in this thematic area, as is also documented by the growing number of publications in this field, particularly strongly increasing internationally. Media scientists, art

historians and musicologists, as well as ethnologists and sociologists and colleagues of many other disciplines are working on this topic.

What's more, the term 'sound studies' is used in very heterogeneous contexts that are neither identical to nor related to the thematic areas mentioned here. Because of this imprecision of terms, the term 'sound research' is consciously used in the A.R.S. project; it is based on a comprehensive understanding of the theory and history of auditory culture and practice; it refers to these in field work and critical analysis. Sound research, therefore, is considered with the phenomena of the auditory and the associated processes.

This thematic approach of dealing with sound as a cultural technique in a transdisciplinary approach is a desideratum, which is why we would like to draft a kind of metastudy in the first project phase about the state of sound research in order to determine what has already been adequately treated in the academic literature or in what areas a deeper engagement seems fruitful. The scientific team consists, besides Prof. Kiefer, of two musicologists and a literary scholar. Already now, after a relatively short project phase, we have come across numerous interesting studies and issues that indeed are being discussed in other scientific contexts, but remain undiscovered for sound research itself.

This metastudy is intended to help us apply a weighting of different thematic areas on what seems a current need to gain further knowledge in this area. The results are also intended to be used by all means: on the one hand, in finding project partners with whom a solid execution of significant and new attempts in sound research can be designed and thus results can be achieved that go beyond artistic manifestations, having a societal impact.

On the other hand, the development of new exploratory questions and thematic areas is also intended to lead to artistic implementations that will then be presented in exhibitions and projects. The knowledge gained through artistic research is, in the process, granted the same high priority as the academically verbalized results. In this way, an interaction in the link between art and research arises that is mutually inspiring. We believe that the arts and the sciences can greatly benefit from a mutual exploration of their respective forms of perceiving, representing, and shaping the world.

To structure and contain the broad field of sound, five thematic areas were defined in which the approaches referred to above will be used. There are already a number of detailed examinations as well as artistic experiments in these fields. Furthermore, the selection is oriented towards possible cross-links with other fields of knowledge. The thematic areas are:

Sound and structure Sound and phenomena Sound and life science Sound and anthropology/ cultural studies Sound and nature

As the research project continues, a selection process will explore these fields and discern relevant approaches. In the further course of A.R.S., two complexes of themes are to be selected from among the five areas to deepen further, and/or the areas themselves will undergo a redefinition.

In the course of the process, it is intended that within these thematic areas (sound) artistic positions are found and developed that articulate a question (hypothesis) and an interest in

knowledge for the respective content. Although based on scientific discourses, it is intended that the findings should be communicated with artistic means. In this way, another form of experience can be offered in the language of art that reinforces the commonalities between art and science, emphasising, for instance, the interest in gaining insights and developing – without watering down the differences. This artistic dialogue casts an unusual look at the results, with freer thinking and creativity, and ideally there arises – as already mentioned above – a mutually enriching interaction with scientific research.

THE FIVE THEMATIC AREAS

A detailed explanation of the five thematic areas would go beyond the scope of this text. And of course some content of the thematic areas overlap. Nonetheless, a summary in key words of what moves us in these thematic areas seems useful.

Sound and structure



- Principles of form inherent to sound, such as Chladni sound figures, acoustic patterns of water
- Sound defines space, sound and sculpture, spatial sound
- Sound in architecture and cities
- Sound and image / abstract film
- Harmonic principles (real or desired ideal)
- Overtones

Through sound itself, structures emerge. On the one hand, these are contained in the sound itself or created by interferences. Sound at times demonstrates astonishing properties that can also be experienced. Equally fascinating are visual representations of sound, such as the sound figures of Ernst Florens Friedrich Chladni from 1787, and John Tyndall's flame forms induced by sound from 1853.

The latter inspired, for instance, sound artist Paul DeMarinis to his *Tongues of Fire* from 2004. In the same year, Peter Kiefer made his work *>traverse frequenz<* for the three interior rooms of the Deutz Bridge in Cologne. The basic frequencies of the rooms were transposed into the audible range and created standing waves through interferences that made it possible to precisely experience the architectural dimensions of the rooms acoustically. This created an architecture of sound that was based on acoustic principles.



Sound and anthropology/ cultural studies

- Cultural technique of listening in a range of cultures
- Function of sound in rituals
- Ascribed cultural significance of sounds in societies (church bells)
- Sound maps
- Historical sound landscapes, e.g., reconstruction of soundscapes from images
- Sound anthropology / ethnology
- Sonic archaeology
- Soundscapes
- Voices of spirituality

The use of sound in the context of societies, as examined in anthropology and cultural studies, is of course not entirely comprehensible, nor will it ever be. For this reason, the A.R.S. project concentrates on the significances ascribed to specific objects or processes in societies of sounds and specific cultures, for example the significance of sounds in Tibetan Buddhism (mantras, etc.) or of creation myths. But sounds are used in a cultural context in the West, too.

One example of an artistic engagement with the topic of sound and identity is provided by Angelika Böck. The piece *Seek Me* arose in the context of Böck's series "Portrait as Dialogue" in collaboration with five Sámi singers from Norway, Sweden and Finland. The so-called "joik" was used, which is what the guttural Sámi singing that is related to yodelling is called. The Sámi often sing these songs to human beings, animals, or natural phenomena, thus evoking them to remember them. Here, sound and melody are more important than the words. This overtone singing serves less as entertainment, more as the possibility to feel more closely to what is being sung about; it is traditionally an integral component of Sami culture. For the project, each participant created a joik as a "portrait" of the artist Angelika Böck. These are portrayed in an audio installation.



Sound and phenomena

- Sounds of the earth: seismologic recording
- Sounds in the sky: aurora borealis
- Acoustic phenomena in architecture, e.g., Athanasius Kircher, echo chambers, sound galleries.
- Resonance as an acoustic phenomenon, e.g. Mark Bain is a sound artist who attempts to demolish buildings with sound, example: singer makes a glass shatter, Tacoma Bridge
- Sonification of physical data, making audible
- Physical sound phenomena such as gravitational waves

In September 2015, the first direct proof of the existence of gravitational waves predicted 100 years earlier by Albert Einstein was provided. The frequency of these waves is – at least theoretically – in the audible range. The images generated show an astonishing degree of similarity with acoustic waveforms.

One example of the artistic treatment of sound and phenomenon was presented by the artist and geologist Dr. Florian Dombois with his work *Circum Pacific 5.1* in the year 2004. In it, synchronously registered seismograms captured at five stations around the Pacific were simultaneously played back over five speakers. Visitors heard rumbling sounds due to several large earthquakes with a global effect. Listeners felt like standing in the middle of a tremendously resonating globe. It was even possible to differentiate the various echoes of the quakes on the earth's crust and the earth's core. You were in a sound space that compressed time extremely and enormously expanded the place of listening: you heard the earth vibrate ...



Sound and life-science

- Sound as a diagnostic technique, auscultation
- Soundscape hospital, e.g., sounds of an MRI
- Sound and noise during and surrounding healing processes
- Physiology of the ear and auditory perception
- Sonic environment in healing and life science
- Sound design of an "ideal therapy room"
- Sound and healing
- Cell resonances
- Medical sonifications can you hear cancer?
- [10]

As early as 400 BCE, Hippocrates of Cos described diagnostic techniques with sound. Auscultation of the body is part of any standard medical examination today. Yet the first stethoscope was presented by René Laennec only in 1819 in his publication *De l'auscultation médiate*.

Besides numerous studies conducted by the German Federal Environmental Agency about the detrimental impact of sound, there are also relatively new studies, e.g., on the sound atmosphere in hospitals and intensive care units to which patients are exposed, an awareness of which was still completely irrelevant until recently. While society has become somewhat aware of noise abatement, we are still nowhere near positively and actively shaping our sonic environment. And this despite the fact that initiatives like, e.g., the World Forum for Acoustic Ecology, founded in 1993, as well as the composer R. Murray Schafer, have already been trying to raise social awareness of this for decades.





Sound and nature

- Sound imitations and birds' mimicry
- Bird learn electronic sounds like ringtones and incorporate them into their mating behaviour
- Interaction between plant growth and sound (music)
- Do cows produce more milk with Mozart's music, and if so, why? (University of Leicester)
- Sound from temperature and humidity, topic of the biosphere, global warming
- Sound and solar energy
- Sound ecology

• Oceanography (*clockwork ocean* research project: small research diving robots communicate as networks via sound in the water)

The thematic area "sound and nature" has shown itself in research until now as the area that has already been most comprehensively explored. Particularly in bioacoustics, research on birdcalls or whale songs has been widely published. Likewise, there are numerous examples of the interaction between humans and animals: the musician and philosopher David Rothenberg has become internationally famous with his concerts with nightingales, other types of birds and even whales. The sound artist Tilman Küntzel constructs objects intended to initiate a dialogue with birds. (See also the text by Dr. Golan Gur in the same volume: "Hearing Plants, Reasoning Nature: Art and Science as Media of Knowledge".)

In addition, we came across sound research approaches that are thus far unknown about acoustic communication between animals and plants and among plants, and we shall pursue them further.

But "inanimate" nature also generates sounds with which Jacob Kirkegaard and others deal with when he records sounds of melting glaciers or in the Arctic Sea around Greenland. Works by Christina Kubisch and Kaspar König, such as solar-powered installations, are in this field of interaction with nature.



PROSPECTS AND SUSTAINABILITY

The A.R.S. Art - Research - Sound project has thus just "put to sea" and is picking up speed. In the course of the next years, exhibitions of artistic projects as well as symposia and specialist colloquia are planned that are intended to help further develop the research topic.

As the conclusion, it is intended that a major exhibition of sound art pieces on the five thematic areas and a conference on sound research and artistic research will take place in 2022. Here, scientists, artists, curators, museum experts, editors and journalists will broach issues and discuss the transdisciplinary approach of A.R.S., contributing just as much to a successful continuation as publications in the course of the project will contribute to sustainability.

Within the scope of further education, a Sound Art Summer School will attract international sound artists to Mainz, and particularly for young sound artists from all over the world will offer an open sound art laboratory for their own creative work and research. The first date for the International Sound Art Summer Academy Mainz has been set for the second half of August 2019.

We are extremely pleased that we have the opportunity to present the project in its initial stage here at the Global Composition Conference. We are linking this with an offer to interested possible cooperation partners to take up contact with the A.R.S. project. We hope that in this way we will possibly even be able to present jointly developed, exciting and innovative results in the scope of sound research and sound art.

The A.R.S. team:

Dr. Carolin Lauer, Zürich, Mainz Dr. Julia Schröder, Berlin, Mainz Dr. Golan Gur, Berlin, Mainz Professor Peter Kiefer, Würselen, Mainz

Internet – references: <u>http://www.ars.institute</u> www.grc.uni-mainz.de; www.peter-kiefer.de

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[6] John Tyndall, Sound, 3. Aufl., New York: D. Appleton & Co., 1898, Appendix 1, S. 427 and Klangräume der Kunst, Kehrer Heidelberg, 2010

[7] Angelika Böck, *Seek Me*, audio installation, 2005, <u>www.angelika-boeck.de</u>, with kind permission of the artist

[8] LIGO measurement of gravitational waves. Creative Commons Attribution 3.0, 2016

[9] Circum Pacific 5.1 by Florian Dombois, Klangräume der Kunst, Kehrer Heidelberg, 2010

[10] Made of wood and brass, this is one of the original stethoscopes belonging to the French physician Rene Theophile Laennec (1781-1826), Science Museum London/Science and Society Picture Library, Creative Commons Attribution-Share Alike 2.0 Generic

[11] First drawings of the stethoscope. René-Théophile-Hyacinthe Laennec (1781-1826) *De l'auscultation médiate...*. Drawings of the stethoscope and lungs.

[12] Jacob Kirkegaard, field recording in Greenland, 2016. Photo by Arild Midtbø Kalseth

[13] Jacob Kirkegaard, field recording in Greenland, 2013. Photo by Konrad Seblon