

Sound and Video Anthology: Program Notes

Space as Instrument

Note by the Curator, Martin Supper

The overriding working topic for me was “Music and Space.” That may sound almost banal—music is always presented in a space. The given room can, however, have remarkably divergent effects on the artistic processes of composition. A brief overview of some of these effects is in order, even if some points may seem to be truisms.

The diversity of architectural spaces has led to different reactions over the course of music history. The ensemble *canzone* developed during the Venetian School (circa 1530–1620 CE) was intimately connected to the architectural and acoustic features of the Cathedral of San Marco. It is considered the trigger for the compositional inclusion of the multiple choir lofts of San Marco for polyphonic and multichoral works.

In more recent times, a standard approach to designing concert halls has emerged among architects. Modern concert halls have acoustic properties that are primarily suitable for music of the 19th century. We see this, on the one hand, in the reverberation times of contemporary concert halls, but also in the arrangement of the podium and seating: The audience is seated as in a theater, facing (and listening) in one direction. In theater this arrangement is also referred to as a *proscenium* or a “picture frame” stage.

Examination of electroacoustic music and sonic arts, and the associated media, leads to a (re-)consideration, including space and directional hearing as part and parcel of the compositional concept.

doi:10.1162/COMJ_a_00586

So a more specific statement of this Anthology's theme could be “Examples of Spatial Compositions.” More precisely still: “A Timeline since 1959.” From Hermann Scherchen's “rotierender Nullstrahler” (a spherical loudspeaker), through the spherical auditorium at the Osaka World Fair “Expo '70,” on to *n*th order Ambisonics. In short: I will present five contrasting compositions, all of which deal differently, in individual manners, with the possibilities of spatial composition. These possibilities were tied up with unusual specifications set by those commissioning the respective works. These were typically technical specifications, to which the composition could and, indeed, needed to react.

The order of the compositions follows the age of the composers, from oldest to youngest, encompassing five generations. The lengths of the work descriptions range from diminutive to extensive; I have deliberately left them as long or short as the composers wished and felt necessary.

Erhard Grosskopf: “Dialectics”

“To compose sound is something different from composing with sound,” said Erhard Grosskopf in March 2020 in a portrait radio broadcast produced by Deutschlandfunk Kultur. His electroacoustic work “Dialectics,” op. 9 for magnetic tape and three instruments, was created in 1969 under unique conditions: analog studio technology and multichannel, spatial sound projection. What these early electronic compositions by Grosskopf share in common are spatialization, process-based character, language, and electronic sound generation.

After the first wave of studios for electroacoustic music were founded worldwide, the Institute for Sonology, founded in the 1960s at Utrecht University, quickly became one of

the most renowned studios under the long-term direction of composer Gottfried Michael Koenig, using voltage-controlled studio technology at an advanced level. In 1969, the 35-year-old Erhard Grosskopf was one of six German composers commissioned to compose for the Osaka Pavilion at Expo '70, for which he absolutely wanted to use the Utrecht Studio to realize his electronics for “Dialectics.” Luckily, the studio was made available to him. Subsequently, in 1971 and 1972, Grosskopf was an academic research assistant in Utrecht at Koenig's invitation, where he also worked on other compositions. In 2020, the analog tapes from Grosskopf's time in Utrecht were digitized by Kees Tazelaar, the director of the Institute of Sonology, now relocated to The Hague.

“Dialectics” was commissioned by the government of the Federal Republic of Germany for Expo '70. It was somewhat unconventional for West Germany to present contemporary music in its pavilion (alongside the American “Pepsi Pavilion,” which presented by work by John Cage and David Tudor, among others, and the Japanese “Textiles Pavilion,” which included work by Joji Yuasa). The architect Fritz Bornemann designed the spherical German Pavilion, comprising four circular subterranean halls and a round auditorium above ground, the shape of which was coordinated with composer Karlheinz Stockhausen. The auditorium sphere was 30 meters in diameter, with space for 800 listeners. The Electronic Studio of the Technical University of Berlin, in collaboration with Siemens AG, designed a sound system of 50 loudspeakers, organized on several horizontal rings around the auditorium with different numbers of loudspeakers in each ring. Sound events could be emitted from almost all directions of this sphere. Listeners sat in a circle slightly below the

Figure 1. Erhard Grosskopf. (Photo by Petra Grosskopf. Used with permission.)



center plane, and the grated floor allowed sound projections from below, especially in lower frequencies. The loudspeaker groups were combined using a cross-patch panel, allowing point-source, striped, or planar diffusion.

In this spherical auditorium, Erhard Grosskopf set up the sound diffusion of the seven audio tracks in "Dialectics" himself and stored the diffusion control on the free track of two mechanically synchronized four-track performance machines (Siemens' "System Klangfilm"). This programming made it possible for eight versions of "Dialectics" to be performed throughout the 180-day exhibition period (from March to September 1970).

For the studio work on "Dialectics" in Utrecht, Grosskopf prepared an extensive score, written in pencil, in which each of the seven tracks (A–G) was detailed in a single-line "staff" (see Figure 2). Types of sound families found in the score include synthetic sounds, diverse instrumental sounds rendered unrecognizable, spoken sounds, and three wind or string instruments (high–medium–low) that played alongside them. A print version of this score is available today.

The version "5/8" is an electroacoustic mix of the seven original

Expo '70 tracks, for which Grosskopf recorded instrumental parts with the individual musicians in advance at Saarländischer Rundfunk [Saarland Broadcasting]. A live performance with musicians was not planned for "Dialectics" in Osaka.

Live performances of the work took place in various locations after Expo '70. The score instructs the instrumentalists to be positioned in a wide triangle within the performance space, with each musician positioned between two loudspeakers. The first live performance, using the version for three wind instruments ("1/8"), took place in 1970 at Norddeutscher Rundfunk in Hamburg.

The title "Dialectics" was inspired by the Congress of the Dialectics of Liberation, which took place in London in 1967. From lectures published in 1968 by David Cooper (one of the congress organizers), Grosskopf extracted a thought by Stokely Carmichael: "They donate freedom . . . it means nothing . . . what they should do . . . is refrain from oppression." Integrating this thought into his compositional process was an ongoing objective for Grosskopf.

[The following paragraph consists of edited excerpts from the liner notes to the CD *SprachKlang: Voice Sound by Erhard Grosskopf*, Harmonia mundi NEOS 12012, released June 2020, written by Martin Supper, translated there by Sirje Viise.]

This recording of "Dialectics version 5/8," for seven-track magnetic tape, flute, viola, and trombone, was performed by Eberhard Blum (flute), Vinko Globokar (trombone), Claude Lelong (viola), and Erhard Grosskopf (sound control). The instruments were prerecorded at Saarländischer Rundfunk in 1969. The seven tracks were produced by Erhard Grosskopf at the Institute for Sonology in the same year, then digitized by Kees Tazelaar at the Institute for Sonology

in 2020. The stereo mix of the seven Expo '70 tracks was engineered by Gregorio García Karman at the Studio for Electroacoustic Music, Academy of Arts, Berlin, 2020

Track Duration: 10:32

Erhard Grosskopf, born 17 March 1934, is a freelance composer living in Berlin. His music has been performed at the Expo '70 in Osaka, by the Berlin Philharmonic Orchestra, at the Deutsche Oper Berlin, and by numerous radio orchestras and other ensembles both in and outside Germany. Recent orchestral works include "Pleiades: Seven Similar Pieces for Piano and Orchestra" (2002) and "KlangWerk 11" (2011). Radio recordings of both works were released on CD by Harmonia mundi in 2018.

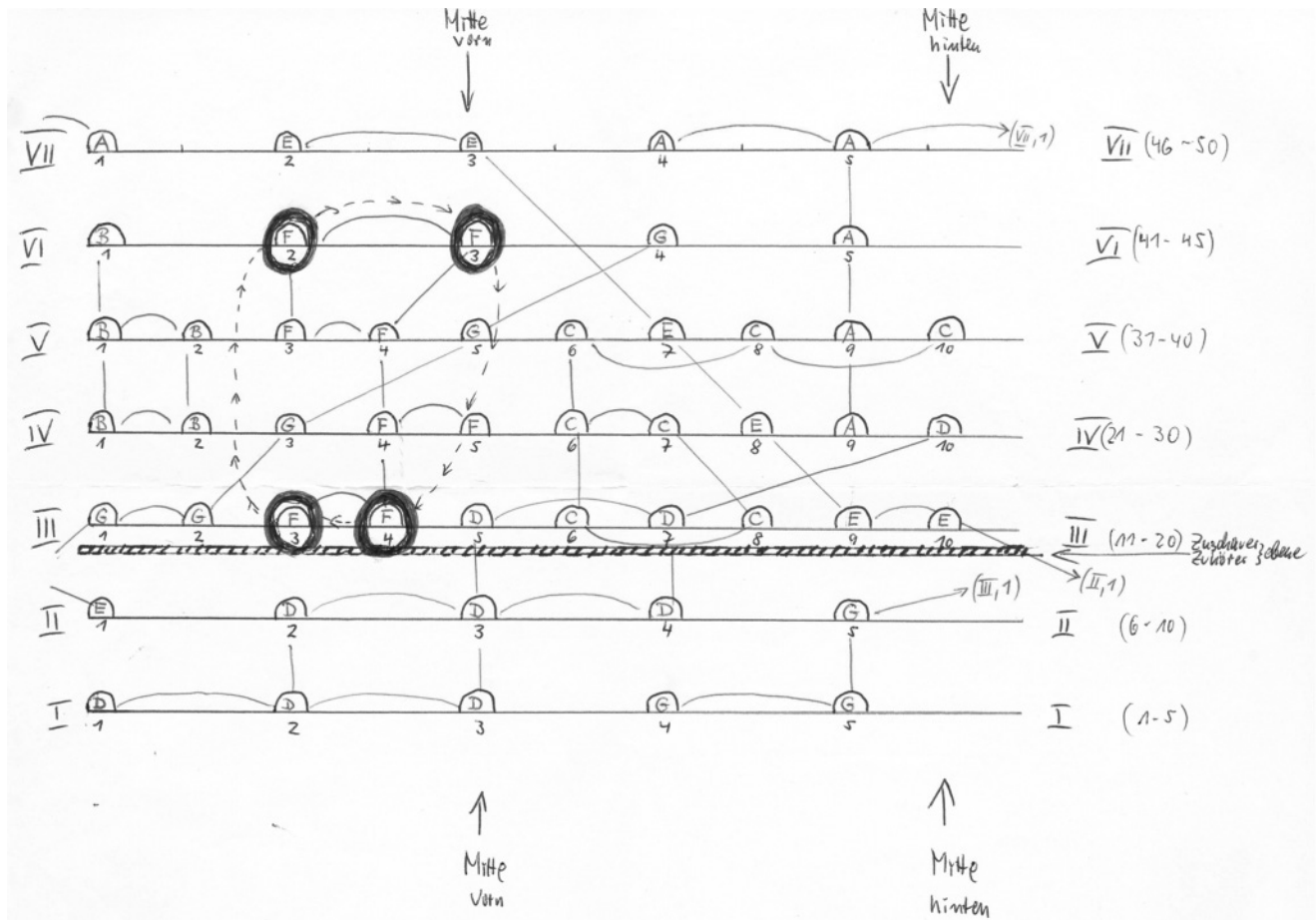
Grosskopf's works are published by Edition Peters, Ricordi, and Boosey and Hawkes. Erhard Grosskopf is a member of the Berlin Academy of the Arts, and documents about his life and work are housed in that institution's archives.

Martin Supper: "Fragmente"

"Fragmente," for two voices, eight-track tape, and eight loudspeakers (1999), was commissioned by the Berlin festival Kryptonale in cooperation with Sender Freies Berlin and designed for the "small" water reservoir in the Prenzlauer Berg district of Berlin. The reservoir, about 150 years old, is reminiscent of a crypt in its column-and-vault structure and has reverberation times as long as 4 to 6 seconds. The audience is seated in the middle of this round architecture, bordered by supporting walls of the tall building, which are directed towards the focal point—that is, towards the audience. Between these supporting walls are loudspeakers

Figure 2. Extract from the composer's score to "Dialectics" by Erhard Grosskopf, in which each line represents one track of the composition,

indicating types of sound to be used on each track. (Score by Erhard Grosskopf. Used with permission.)



and a live speaker, with everything surrounding the audience in a circle. "Fragmente" is intended to be a minimalist work, based on permutations. The individual sound units are meant to incrementally establish a connection to the language of the room.

It was a deliberate decision not to make a multichannel version of the work for this Anthology. The live stereophonic recording engineered by Jean Szymczak magnificently reproduces both the spatialization in the reservoir and the composition itself. In the opening minutes it is not im-

mediately apparent whether the background noise is from the audience or part of the composition itself. Roland Barthes may be considered to have been the spiritual godfather of the work, and his words are paraphrased: "Die rauschende Masse einer Sprache bildet eine delikate Abschirmung; sie hüllt den Fremden in eine Haut von Tönen . . ." [The rustling mass of a language forms a delicate screen, enveloping the stranger in a skin of tones . . .].

Duration, dynamics, spatial distribution, and degree of transformation of the taped voice were based

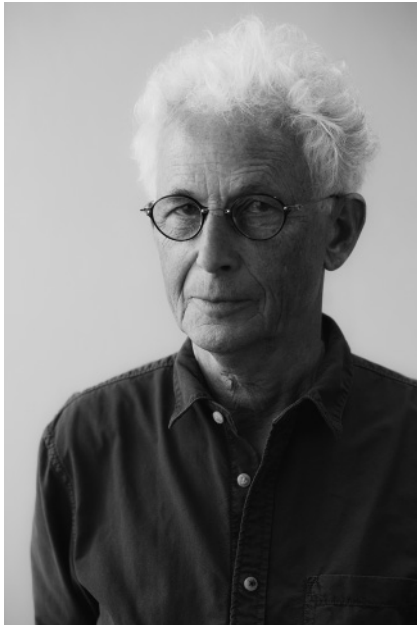
on thought structures inspired by Barthes and Michel Serres, but not directly quoted. In other words: Things speak in numbers. Who should be surprised when the roar of things themselves can be generated or understood?

Performers: Hanns Zischler (voice on playback tape), Robert Podlesny (live voice), and Martin Supper (sound diffusion).

Track Duration: 25:54

Martin Supper, Professor for Electroacoustic Music and Sonic

Figure 3. Martin Supper. (Photo by Susanne Elgeti. Used with permission.)



Arts at Berlin University of the Arts, was born 1947 in Stuttgart. His training as a radio and television technician was followed by studies of theoretical computer science, linguistics, and systematic musicology at the Technical University of Berlin. In 1980 he received a grant from the German Academic Exchange Service allowing him to study computer music and electroacoustic music under Gottfried Michael Koenig for two years at the Institute for Sonology at Utrecht University. He then completed a postgraduate degree in computer science and a PhD in musicology supervised by Helga de la Motte-Haber and Dieter Schnebel.

From 1985 to 2017 he served as director of the Studio for Sonic Arts and Sound Research, and from 2009 to 2015 he served as director of the postgraduate Department of Sound Studies, both at the Berlin University of the Arts. Since 2013 he has also served as regular guest professor for Sonic Arts at the Shanghai Conservatory of Music.

Kirsten Reese: “Atmende Kugel”

The rotating spherical loudspeaker developed by Hermann Scherchen in the Gravesano Experimental Studio, called the “atmende Kugel” [breathing sphere], was conceived as an ideal loudspeaker radiating sound equally in all directions. Kirsten Reese’s composition is based on acoustic research documented in liner notes to recordings from the *Gravesaner Blätter* magazine published by Scherchen. These acoustic documents were used to generate new music based on the interplay of voice and loudspeaker. The sphere projects sounds in all directions, in a circular pattern, while the singers position themselves around the sphere, so to speak an image of entanglement of the source material and its own transformation.

Scherchen can be described as a seminal representative of “artistic research.” As a conductor, over and above his performances of the classical repertoire, he was a pioneer of contemporary music. But he also devoted himself to questions of media, radio and recording technology, and electronic music that were looking to the future. In the experiments of the Gravesano recordings, the intensity with which acoustic phenomena were examined conveyed the utopianism and humanism of Scherchen and his comrades-in-arms. The sonic examples, in particular, deal with perception and understanding: What is the “sounding message” of the recorded sound material? The sound through the spherical loudspeaker simultaneously gives the historical sound documents and their new composition both an aura and a lively presence.

“Atmende Kugel” (2017) for six voices and Scherchen’s spherical rotating loudspeaker was commissioned by Kontakte: Biennale for Electroacoustic Music and Sonic

Figure 4. Kirsten Reese. (Photo by Harry Schnitger. Used with permission.)



Art, and the Akademie der Künste Berlin, with support from the Ernst von Siemens Music Foundation. Its premiere took place with the Neue Vocalsolisten at the Akademie der Künste Berlin in the Kontakte 2017 festival.

Track Duration: 26:22

Kirsten Reese, born 1968 in Kiel, grew up in Hong Kong, the Philippines, and the Rhineland. Since 1988 she has been resident in Berlin. She studied flute, electroacoustic music, and composition in Berlin and New York (1992–1993). She has been active as a flutist, author, and curator in the field of contemporary and experimental music.

As a composer and sound artist she has collaborated with renowned instrumentalists and ensembles (Ensemble Mosaik, the Neue Vocalsolisten) and her works were presented at international festivals and exhibitions, including the Eclat Festival, Wien Modern, and Heroines of Sound (2015). Her works focus on site-specific and performative aspects and the use of “found sound” and archival and documentary material.

Figure 5. Miriam Akkermann. (Photo by Anastasia Dittmann. Used with permission.)

Her interest for different loudspeaker and media constellations and the aura of historic electronic instruments is explored in “Light Green Rituals” for Fairlight CMI synthesizer and ensemble (2018) and “Atmende Kugel” (2017). Another focus lies on compositions, installations, and audio walks for urban and rural landscapes, for instance, the Berlin Rosenthaler Platz audio walk with singing sirens, in collaboration with David Wagner; KlangBallon (2010) for instruments, mobile loudspeakers, sensor data, and three trumpets in a hot air balloon; and No Voice Audible but That of the Sea on the Far Side (2013), an installation in a sound-damping cylinder structure in Aarhus harbor.

Reese has received numerous grants and residencies, including the Cité des Arts Paris, Villa Aurora Los Angeles, and a nomination for the German Sound Art Award. She has taught electroacoustic composition at the Berlin University of the Arts since 2005 and from 2007 to 2009 was guest professor for artistic transformation at that institution. In 2011 she taught at the Bern University of the Arts in the Music and Media Art program. In 2018 she taught the workshop “Composing with the Archive” at the Darmstadt International Ferienkurse

Miriam Akkermann: “Shadow”

In one moment sharply contoured, in the next blurry and vanishing. Appearing and disappearing almost imperceptibly. Existing prominently without being grasped. Overlaying and independent. Coming close without touching. Oppressive. Gone. Creating an illusion of depth and movement on a solid wall.

“Shadow” (2000) is based on sound synthesis using the nonstandard



sound synthesis program Segmod, developed by Luc Döbereiner and Martin Lorenz. The piece was first published in a stereo version on the digital album *Segmod* on the Dumpf label.

Track Duration: 4:46

Miriam Akkermann was born 1978 in Seoul and is a sound artist and musicologist. She studied flute and music and new technologies at the Claudio Monteverdi Conservatory in Bolzano, audio communication at the Berlin Technical University, and composition and Sonic Arts at Berlin University of the Arts, where she also completed her PhD in musicology in 2014 with the dissertation *Zwischen Algorithmus und Improvisation: David Wessel, Karlheinz Essl und Georg Hajdu* [Between Algorithm and Improvisation], supervised by Dörte Schmidt and Martin Supper. From 2015 to 2019 she was responsible for the area “sound” in the Department of Media Studies at Bayreuth University. Since 2019 she holds a junior professorship for empirical musicology at the Dresden University of Technology.

Mads Kjeldgaard: “I solens flint 1000 floder”

This piece, composed in 2019, was inspired by particular concrete sounds—recordings from icy rivers, household items, and paper—and the topology contained in these sounds. Seeing the sound waves as maps pointing towards different sonic destinies. These concrete sounds were combined with analog feedback systems. The title for the piece can be roughly translated as “In the Shard of the Sun 1,000 Rivers.” The piece was produced using seventh-order Ambisonics at the Norwegian Center for Technology in Music and the Arts in Oslo, synthesis recorded at the Electronic Music Studio in Stockholm.

Structure

The piece has two major components that intersect each other in the beginning and the end of the piece. The first component (audible in the introduction and the “outro”) consists in the higher parts of the spectrum of granular structures that are contrasted and reactive to a low frequency whooshing sound, referred to as the “granular component.” The second, main component, situated in the middle part of the composition, consists of a vortex of flutelike sounds, referred to as the “vortex component.” A third component is the sound of an icy river recorded in a Norwegian forest in wintertime.

Granular Component

The source material for this component consists mainly of hydrophonic recordings from a thawing lake in central Copenhagen. These recordings originally contained considerable amounts of background noise, in part

Figure 6. Mads Kjeldgaard. (Photo by Sofie Amalie Klougart. Used with permission.)

owing to the recording equipment but mostly due to traffic sounds. The noise was removed using the Izotope RX software and what was left was a crackling sound existing in a vacuum of sorts, with no background. These were then further edited, both manually and using custom scripting. The low, whooshing sound in this component is a processed recording of a hand paper dispenser from a bathroom.

Vortex Component

The source material for the vortex component was synthesized and recorded in Studio 3 at the Elektron Musik Studio in Stockholm. During a residency there in 2018, I experimented with self-playing feedback system patches on the Buchla 200 synthesizer available in this studio, producing over 25 hours of material.

Track Duration: 6:46

Mads Kjeldgaard, born 1988 in Horsens, Denmark, is a composer of electronic music. His main field of interest as a composer is computer



music. Using self-authored algorithmic systems and do-it-yourself electronics, he explores psychoacoustics as well as ideas of time, perception, and “living” sound environments. By expressing himself mainly in software, his compositions often end up as code outlining the conditions of composition,

rather than the specifics of the art form.

Kjeldgaard has been creating electronic music since childhood. In his formative years he became interested in making sample-based hip-hop music. This has manifested itself in a lifelong curiosity in the art of sampling, as well as the acquisition, archival, and manipulation of sampleable material, ranging from digging through piles of odiferous vinyl records on thrift shop floors to exploring the world of timbres with a microphone.

Kjeldgaard studied electronic music composition at the Danish Institute of Electronic Music at the Danish Royal Academy of Music, and has a degree in journalism from the Danish School of Media and Journalism. He works at the Norwegian Center for Arts and Technology in Oslo and is part of nyMusikk’s Composer Group.

As a developer, Kjeldgaard contributes to various open-source software projects related to digital art. In 2019 he won a gold award at the International Spatial Audio Conference.