



**Electroacoustic Music
Beyond
Concert Performance**

I

**10 – 14 JUNE 2014 | BERLIN | GERMANY
UNIVERSITÄT DER KÜNSTE BERLIN,
MASTERSTUDIENGANG SOUND STUDIES
IN COOPERATION WITH TECHNISCHE UNIVERSITÄT BERLIN,
FACHGEBIET AUDIOKOMMUNIKATION AND FREIE UNIVERSITÄT BERLIN**

CONFERENCE COMMITTEE

FABIAN CZOLBE (BERLIN)

JULIA H. SCHRÖDER (FU, BERLIN)

VOLKER STRAEBEL (TU, BERLIN)

MARTIN SUPPER (UDK, BERLIN)

MARC BATTIER (MINT-OMF, UNIVERSITÉ DE PARIS-SORBONNE, FRANCE)

LEIGH LANDY (MTI, DE MONTFORT UNIVERSITY, UK)

DANIEL TERUGGI (INA/GRM, FRANCE)

WORD OF WELCOME

Dear EMS14 participants,

The Berlin University of the Arts is delighted to host EMS14 at the Institute of Sound studies, home of our postgraduate Master's programme. This program is in many ways similar to the EMS members' courses. We combine musical studies with a focus on electroacoustics with research in sound design, auditory architecture and auditory culture. As many of our professors and students specialise in sound art, we found it logical to suggest a theme at the fringes of electroacoustic music studies : "Electroacoustic music beyond concert performance" You will have many opportunities to experience sound installations in our evening programme and Berlin's club music if you choose to do some "fieldwork" after hours.

We specifically would like to thank the EMS directors, Marc Battier, Leigh Landy and Daniel Teruggi who suggested an EMS in Berlin issue. Furthermore, Sound Studies is very pleased to collaborate with the Technical University of Berlin, Department of Audio Communication and the Free University of Berlin.

I wish you all a great EMS14
Prof. Dr. Martin Supper
Master's Program Sound Studies
Universität der Künste Berlin

Welcome to EMS 2014. The Electroacoustic Studies Network directors are thrilled that this event is being held in Germany for the first time and are particularly happy that the event's steering committee brings together specialists from three renowned Berlin universities, the University of the Arts, the Technical University and the Free University, all three having made enormous contributions to scholarship related to innovative musical practices, not least regarding electroacoustic music and its related field of studies.

The steering committee have chosen the timely theme, "Beyond Concert Performance", opening up discussions related to alternative sites, both real and virtual, sound art and much more alongside the normal EMS thematic areas. This choice will bring together specialists from within music and the fine arts. We shall discover how these approaches and vocabularies can meet within this electroacoustic music studies event.

Now into its second decade, the conference this year saw the largest number of both submissions and acceptances, underlining the healthy outlook of both the EMS initiative and the field as a whole. We wish you all a very exciting conference in this very dynamic cultural city!

Marc Battier, Leigh Landy, Daniel Teruggi
EMS founding directors

The Audio Communication Group at Technical University Berlin (TU) fosters our school's long-standing tradition of bringing together research in the sciences and engineering with the humanities and awareness of the arts. Its Electronic Music Studio, founded in 1954, marks this link. Since the 1970s, our program has been closely connected with the University of Arts Berlin, and we also invite visiting composers and scholars in the course of the Edgard-Varèse-Guestprofessorship for computer music, funded by the German Academic Exchange Service.

I feel fortunate that the Audio Communication Group is collaborating with the University of Arts' Sound Studies Program in hosting the 2014 EMS conference. This year's keynotes will be given by Helga de la Motte-Haber, who has taught in TU's musicology department, and Miller Puckette, who holds the Edgard-Varèse-Guestprofessorship this semester. We are also glad to support the accompanying presentation of sound installations.

I welcome all participants in this year's EMS and I am looking forward to five intense days of presentations and fruitful exchange. I would like to express my thanks to the speakers, the Conference Committee, my colleagues from TU and everyone else involved and making this happen.

Prof. Dr. Stefan Weinzierl
Technical University Berlin
Chair of Audio Communication Group
Dean of Humanites

Electroacoustic music beyond concert performance is in the meantime an everyday common aesthetic experience, be it in ringtones, earphones in the subway, or sound installations in transit passages at airports, not to mention the immense increase of electroacoustic phenomena in countless genres of popular culture, which include, of course, cinema and feature films on TV. While it took a long time for electricity to become an integral part of art music, electroacoustic developments went hand-in-hand with the mass-media phenomena of early radio and the talkies. Institutions such as Bell Laboratories and several radio corporations became homes for electroacoustic music much sooner than concert halls, such as Carnegie or the Viennese Musikverein, which to this day exhibit a remarkable kind of xenophobia regarding music without performers. Music consumption, however, underwent a deep change in the past century, ever since the arts began to be transformed by developments in audio technology. Similar to Cologne or Stockholm, Berlin also has electronic music studios: the studio at the Technische Universität, being where Karlheinz Stockhausen's spherical music auditorium for the Expo in 1970 in Osaka was developed, as well as the merging of art and music in the internationally acclaimed Berlin Klangkunst scene. And now I wish to warmly welcome all of the participants of the electroacoustic music network conference to Berlin.

Prof. Dr. Albrecht Riethmüller
Head of the Musicology Department
Freie Universität Berlin

TABLE OF CONTENT

WORD OF WELCOME

SCHEDULE 4

ABSTRACTS 8

KEYNOTE LECTURES 147

SOUND INSTALLATIONS 149

TUEDSDAY 10 June		JIB GNS
09:00	Registration is open	
10:00	Welcome and Opening	
		Session 1 – chair: Leigh Landy
10:30	Andrea Szigetvári	Soundscape Composition – Strategies For the Development of New Forms of Sonic Performance
11:00	Simon Emmerson	Listening in time and over time – the construction of the electroacoustic musical experience
11:30	<i>break</i>	
		Session 2 – chair: Volker Straebel
12:00	Robert Normandeau	The ritual of the electroacoustic concert
12:30	Fabian Czolbe	“Klangkunst” goes mobile
13:00	Peter Batchelor	Evaluating Acousmatic Compositional Strategies within Public Sound Art
13:30	<i>lunch</i>	
14:00	<i>lunch</i>	
		Session 3 – chair: Sabine Sanio
14:30	Hannah Bosma	Playing Loudspeakers, Unsettling Concerts. Gender and Performance in Interdisciplinary Electroacoustic Music
15:00	Volker Straebel	Louis and Bebe Barron's "Electronic Sound Images" for the Science-Fiction Movie "Forbidden Planet" (1955/56)
15:30	Tatjana Böhme-Mehner	Searching for Safety: The concert listener beyond the limits of the concert hall
16:00	<i>break</i>	
		Session 4 – chair: Martha Brech
16:30	Luc Döbereiner	How to Think Sound in Itself? Towards a Materialist Dialectic of Sound
17:00	Olaf Hochherz	Reasons for the Occurrences of Synthesized Referential “Real-World” Sounds “Outside” of Electroacoustic Music Concert Hall
17:30	John Young	The Shock of Risk
		17:00 Sound Installation I
		–
20:30	keynote lecture by Helga de la Motte-Haber	–
		22:00

WEDNESDAY 11 June		JIB GNS	EIN 127	
		Session 5 – chair: Frédéric Döhl		
09:00	Lindsay Vickery	Notating the Sonic Environment		
09:30	Tom Adams Monty Adkins	Digital Music, Digital Distribution		
10:00	Aaron Einbond	Composer as curator: uncreativity in recent electroacoustic music		
10:30	<i>break</i>		Panel II	
		Session 6 – chair: John Young		Session 7 – chair: Gregor Herzfeld
11:00	Michael T. Bullock	The electroacoustic performance/installation and its audience	11:00	James Mooney Hugh Davies's Electronic Music Documentation 1961–8
11:30	Teresa M. Connors	Bringing Forth a World Sound Installation as a Process of Cognition	11:30	Viviane Waschbüsch The stance of German “New Simplicity” composers on sound art
12:00	Ian Stevenson	Into-Place-Sound: Sound Installation Art	12:00	Sonya Hofer “Atomic” Music: Navigating Experimental Electronica and Sound Art through Microsound
12:30	<i>lunch</i>		<i>lunch</i>	
13:00	<i>lunch</i>		<i>lunch</i>	
13:30	<i>lunch</i>		<i>lunch</i>	
		Session 8 – chair: Wolfgang Heiniger		Session 9 – chair: Hannah Bosma
14:00	Nicola Baroni Carlo Benzi	Gesture analysis and rhetoric. Hyper-cello as an algorithmic composer.	14:00	Panos Amelides Universalizing the acousmatics: storytelling and culture-specific works
14:30	Heather Frasch	(Re-)Contextualizing Meaning with Physical and Sonic Objects in the work of Hanna Hartman	14:30	James Andean Towards a Narratology of Acousmatic Music
15:00	Owen Green	Four Small LLEAPPs for Electroacoustic Music Studies: Notes on performance strategies from a series of participatory electronic music workshops	15:00	Diego Garro From ‘concert’ to ‘screening’: visual anecdotes in Electroacoustic Music presentations
15:30	<i>break</i>		17:00 Sound Installation II – – 22:00	
		Session 10 – chair: Miller Puckette		
16:00	Jack Nagle Kerry Hagen	How Live is Real-Time?		
16:30	Jin Hyun Kim	An Action-Oriented Sonic Experience: Taking multimodal and interactive electroacoustic music and sound art into account		
17:00	Theodoros Lotis	Site and Time Specificity in the Performance of Live Electronics.		
17:30	Per Anders Nilsson	Control or Play?		

THURSDAY 12 June		JIB GNS	EIN 127		
		Session 11 – chair: John Dack			
09:00	Jean-François Denis	Access Beyond The Concert Performance: Practical Consequences To On-Demand Online Electroacoustic Music Streaming			
09:30	Christopher Haworth	Ecosystem or Technical System? Technologically-Mediated Performance and the Music of <i>The Hub</i>			
10:00	Ricardo Dal Farra	e-music for Humanitarian Actions: The “art! ∞ climate” initiative			
10:30	break		Panel II		
		Session 12 – chair: Morag J. Grant			Session 13 – chair: Dörte Schmidt
11:00	Pascal Terrien Nicolas Marty	Listening behaviors and formal representation of an extract of acousmatic music in non-expert listeners	11:00	Luisa Santacesaria	<i>Switch</i> by Benjamin Thigpen and Darren Copeland: a hybrid case of electroacoustic live performance work
11:30	Nye Parry	Toward Sound Installation, Spatial metaphors in the musical avant-garde of the mid 20th Century	11:30	Simonetta Sargenti	Dramaturgy of sound, mobile sound and digital garden as grounding concepts of multimedia
12:00	Suk-Jun Kim	Taking Time and Taking Place: Deconstructing the Studio aesthetics	12:00	Anthony Tan	Timbre as Vertical Process: Attempting a Perceptually Informed Functionality of Timbre
12:30	lunch		lunch		
13:00	lunch		lunch		
13:30	lunch		lunch		
		Session 14 – chair: Stefan Weinzierl			Session 15 – chair: Marc Battier
14:00	Luca Forcucci	Touching the Audience	14:00	Makato Mikawa	Aesthetic Meaning of Mixed-Media and Intercultural Composition: <i>Water Music</i> (1960) by Tôru Takemitsu and Hisao Kanze
14:30	Georgia Kalodiki	Conceptual strategies in forming electroacoustic sound identities	14:30	Yuriko Hase Kojima	Listening Analysis of Takemitsu's “Water Music”
15:00	Satoshi Morita	Sonic art for intersensory listening experience	15:00	Mikako Mizuno	Sound Arts, Sound Performances and Sonic Arts ---alternative presence of Japanese electroacoustic music
15:30	break				
		Session 16 – chair: Barry Truax			
16:00	Gary Kendall	The Feeling Blend: An Extension of Blend Theory For Feeling and Emotion in Electroacoustic Music			
16:30	Terri Hron	Between the stage and the gallery: objects and spaces in three works by Canadian sound artists			
17:00	Ellen Flügge	Hearing Space			
17:30	Giacomo Albert	The origins of sound installation: case study Turin	17:00 Sound Installation III – – 22:00		

FRIDAY 13 June		JIB GNS	EIN 127		
Panel I		Session 17 – chair: Jost Muxfeldt	Panel II		Session 18 – chair: Simon Atkinson
09:00	Massimo Avantaggiato	Donatoni: a critical re-appraisal of Quartetto III	09:00	Frédéric Dufeu Alain Bonardi	Analysing the Creative Process through a Modelling of Tools and Methods for Composition in Hans Tutschku's <i>Entwurzelt</i>
09:30	Alba F. Battista	New dimensions of musical enjoyment. The Analysis problem: Luc Ferrari through the Aesthetic-Cognitive Method	09:30	Pierre Couprie Mikhail Malt	Representation: From Acoustics to Musical Analysis
10:00	Michael Clarke Frédéric Dufeu Peter Manning	Barry Truax <i>Riverrun</i> (1986/2004), a case study from the TaCEM project, exploring new approaches to techniques of analysis and re-synthesis in the study of concert electroacoustic works	10:00	Bruno Bossis Laurent Pottier	A Method For the Analysis of the Relation Between Symbolic Notation and Electroacoustic Textures In Hans Tutschku's <i>Entwurzelt</i>
10:30	break		10:30	break	
		Session 19 – chair: Mikhail Malt			Session 20 – chair: Marc Battier
11:00	Jean-Louis Di Santo	Analysis of Incidences/résonances by B. Parmegiani with an acousmatic score	11:00	Lin-Ni Liao	TRANSCULTURATION: Western Intellectual Organization and Far Eastern Spiritual Listening
11:30	Giuliano Obici Alexandre Fenerich	Symphonie pour un Homme Seul - de-acousmatized (SPHUS-d)	11:30	Ruibo Zhang	CHEARS ver.2.0 – Combination and Integration of EARS2
12:00	Cecilia Taher	The unity of opposites: Jonathan Harvey's <i>Advaya</i> for cello and electronics	12:00	Bai Zhao	Heritage of Gérard Grisey in China
12:30	lunch		Sound Space 17:00 & Wave Field – Installation 20:30		
13:00	lunch				
13:30	lunch				
		Session 21 – chair: Pierre Alexandre Tremblay			
14:00	John Dack	Pousseur's 'Huit Etudes Paraboliques': Musical and Social Contexts			
14:30	Mikko Ojanen	Electroacoustic concert and happening performances of the '60s and early '70s in Finland			
15:00	Barry Truax	Electroacoustic Music of Extended Duration: A Question of Format			
15:30	break				
		Session 22 – chair: Julia H. Schröder			
16:00	Miriam Akkermann	COMPUTER NETWORK MUSIC Approximation to a far-scattered history			
16:30	Georg Hajdu	Disposable Music			
17:00	Doug Van Nort	Approaches to Distributed Agency and Shared Musical Meaning in Electroacoustic Improvisation			
20:30	keynote lecture by Miller Puckette				
SATURDAY 14 June			JIB GNS		
		Session 23 – chair: Pierre Couprie			
09:00	Landon Morrison	A Comparative Study of Graphic Representation Tools Based on an Aural Analysis of Philippe Leroux's <i>M.É.</i>			
09:30	René Mogensen	Comparing comprehensibility of analytical representations of electroacoustic music: pictographic versus symbolic			
10:00	Emily Richmond Pollock	The Electronic Manifesto: Scores for Tape and Synthesized Music in John Cage's <i>Notations</i>			
10:30	break				
		Session 24 – chair: Martin Supper			
11:00	Florence Lethurgez	Read music at the concert: program notes of electroacoustic music composers			
11:30	Bertrand Merlier	The Sampler. An historical, musicological and phenomenological study			
12:00	Simon Atkinson Kerry Francksen	Ultra-sensing: moving beyond 'work' and 'venue' in intermedia art			

Soundscape Composition – Strategies For the Development of New Forms of Sonic Performance

Dr. Andrea Szigetvári
F. Liszt Academy of Music, Budapest
sziget@starkingnet.hu

Andrea Szigetvári is an electroacoustic music composer. Her creative and research interests are timbre in new music, interactive performance, and synchresis in audiovisual art. She studied in Warsaw at the F. Chopin Academy of Music and then as a Fulbright scholar in the USA, returning to Hungary to set up the Hungarian Computer Music Foundation. In addition to composing, she lectures on computer music composition and has organized international new music festivals, conferences and pan-european projects.

This paper will examine how the emergence of the electroacoustic soundscape has introduced new, extended forms of musical and sonic performance challenging the way “traditional” fixed media and live electronic pieces are performed and received.

Soundscape is a wide concept. Here we will use Barry Truax's definition which states that it is:

“a form of electroacoustic music characterized by the presence of recognizable environmental sounds and contexts, the purpose being to invoke the listener's associations, memories, and imagination related to the soundscape”¹.

Environmental sounds have been widely used in electroacoustic music since Pierre Schaeffer coined the notion of “*musique concrète*”. According to his theory, the recorded sound material used in electroacoustic music should be disguised, so the original “meaning” of the environmental sounds are detached and replaced by “meaning” derived from the play of abstract forms. In the *musique concrète* context the abstract musical intentions of the composer are brought to the foreground. The reception is challenged by the composer's skills to form a construction, where the referential meaning of the sounds constituting the form do not play an important role.

The growth of the soundscape as a genre can be dated twenty years after Pierre Schaeffer's initiative, and in some cases can be viewed as oppositional to his conception whereby the *environmental context* remains central to the intention of the composer. In extreme cases the composer's intervention can be reduced to the choice of environment, and the recording of sounds present. When the abstraction and composition of sonic material no longer takes precedence, it becomes necessary to question and extend our existing definitions of what constitutes the activities of composition and listening.

From the analysis of a number of pieces bearing the attributes of soundscape composition as defined earlier, one can find that the absence or limited use of abstract transformation of sonic material and its organization are replaced by different methodologies of mediation regarding the referential context. Composers re-present their source sounds in many ways. The location of the sound objects, the time and other conditions of the recording, become or remain intrinsic to the auditor's aesthetic, cognitive and affective experience. The ways in which the works are mediated become crucial both to the works themselves and subsequently in defining new paradigms of sonic performance and its reception.

This paper seeks to describe and analyse examples of soundscape composition through close attention to the various strategies of referential and contextual

¹ Barry Truax: Acoustic Communication

mediation deployed by their respective composer/creators.

The following methods of mediation will be discussed:

- describing the concept (e.g. Luc Ferrari: *Presque Rien* No. 1)
- written narration (e.g. Peter Cusack: *Dangerous Places* book and audio cd)
- documentary aural narration (e.g. World Soundscape Project: *Soundscapes of Canada*)
- poetic aural narration (e.g. R. Murray Schafer, Bruce Davis, Brian Fawcett: *Okeanos*, J. Cage: *Roaratorio*)
- adding referential (e.g. folk) music (e.g. Cage: *Roaratorio*)
- embedding the soundscape in multimedia (photos, videos) environment (e.g. Peter Cusack: *Dangerous Places* book and audio

cd, Marek Choloniewski & European Bridges Ensemble: *GPS-Trans11, Dé(R)ive.*)

- creating interactive websites (e.g. Peter Cusack: www.favouritesounds.org)
- sonification processes, soundwalks (e.g. Christina Kubisch: *Electromagnetic Soundwalks*)

Selective bibliography:

Truax, Berry: *Acoustic Communication*, Ablex Publishing, Westport 2001

Schafer, Murray: *The Soundscape – the Tuning of the World*, Destiny Books, Rochester 1977

Drott, Eric: *The Politics of Presque rien* In: *Avant-Garde Music and the Sixties* (Robert Adlington, ed.), Oxford University Press, New York, 2009

Listening in time and over time – the construction of the electroacoustic musical experience

Simon Emmerson

Music, Technology and Innovation Research Centre

De Montfort University, Leicester LE1 9BH UK

s.emmerson@dmu.ac.uk

Simon Emmerson is Professor of Music, Technology and Innovation at De Montfort University, Leicester. Recent works with live electronics for Darragh Morgan (violin), Keynote+ (harpsichord and piano) and Sond'Arte Ensemble (Lisbon); acousmatic commissions from IMEB (Bourges), GRM (Paris) and Inventionen Festival (Berlin). Two CDs on Sargasso. Contributor and editor: The Language of Electroacoustic Music (Macmillan, 1986); Music, Electronic Media and Culture (Ashgate, 2000). Solo book Living Electronic Music (Ashgate, 2007). Founder Secretary of The Electroacoustic Music Association of Great Britain in 1979, and a Trustee of its successor 'Sound and Music' 2008-2013. In 2009-2010 he was DAAD Edgar Varese Visiting Professor at TU, Berlin. In 2011 he gave keynote addresses at the Australasian CMC (Auckland) and ICMC (Huddersfield), and in 2012 at the Seminar - Music Science Technology (São Paulo) and WOCMAT (Taiwan). He was co-principal investigator of the AHRC-funded project 'New Multimedia Tools for Electroacoustic Music Analysis' 2010-2013.

The relationship of 'music' to 'sound art' is increasingly being discussed. This seems to take two forms: firstly a discussion of *terms* – the meaning of words. Thus 'is there a distinction in meaning?' tends to become 'is all music really sound art?' (and vice versa!). On the other hand this discussion may be based on a greater engagement with substance: what distinguishes these two descriptors *in their practice*. Practice in this case embraces 'the total musical fact' (after Molino/Nattiez), from conception to reception in both sonic and social dimensions.

A first stage distinction has often been made. *Music* maintains a 'beginning-middle-end' paradigm and demands attention from start to finish, while *sound art* can be 'sampled' (with potentially *asynchronous* listening) without damage to the creator's intention – indeed it may be part of that intention. Clearly such a simple dialectical divide has been eroded and a continuum tentatively established. Human performance of any kind tends to be designated 'music' but may be sampled as if it were 'sound art' (especially) if extended in time and (crucially) if the venue allows or encourages movement of the audience. The roles of composer, performer

and listener may even become blurred – or at least reconfigure in new ways.

But this in turn might be too simple! To what extent can the demand for concentrated and extended listening be compromised? And what are the consequences? Notwithstanding our expectations and previous descriptions, in 'open' spaces I have frequently observed focused listening for extended periods. Furthermore there are issues of signal to background noise ratio within the listening space. What function can dynamic range and frequency range have in 'lo-fi' spaces? The transposition of a narrative work intended for complete listening into an environment where sampling is encouraged clearly generates a new kind of 'work'.

And conversely the freedom of some sound art (sound installation, for example) to create the unexpected for an unpredictable audience cannot necessarily be disciplined into a narrative chain or any other kind of *through-composed* 'logic'. (It is an interesting question whether this assumes, in turn, a sense of something external propounding that logic). Nonetheless there may be strategies to create shaped short-term experiences that can indeed be woven together by the listeners in many different

ways that can all make some kind of aesthetic sense.

Several kinds of hybridization (and maybe compromise) are at work here. This paper will try to make some kind of sense of this often confusing field of creative possibilities. The discussion will start with issues of listening and the 'forming' of experience in a variety of spaces, and the varying demands that different approaches to the artwork make on memory. I shall go on to discuss the formation of what are termed 'local forms', sometimes 'fractal forms' - small segments that reveal shape and order of larger structure. These are designed to be grasped at shorter and more immediate timescales and to be meaningful 'moments'. At the other extreme of timescale we may have 'flux' and 'drift' forms that seem to suspend the passing of time in their slow change.

Analysis will be conducted from (sometimes personal) observation of works and performances such as – Stockhausen's *Moment Form* in practice (eg. *Kontakte*, *Momente*, *Telemusik*) – ideal and real mobility of form;

Cage's *Roaratorio* - live performance version (London 1987) as prototype 'concert installation' contrasted with the *Hörspiel* recording.

Kaffe Matthews' performance in Tate Modern's Turbine Hall (2010) – interactive listening and performance practice; the performer-audience relationship.

Selective bibliography:

Emmerson, Simon (2001). 'New spaces/new places: a Sound House for the performance of electroacoustic music and sonic art'. *Organised Sound* 6(2) pp.103-105.

Fetterman, William (1996). *John Cage's Theatre Pieces: Notations and Performances*. New York: Routledge.

Huberman, Anthony (2004), Interview with Kaffe Matthews, *Bomb* magazine, 89 (Fall 2004), republished on www.annetteworks.com.

Stockhausen, Karlheinz (1963). *Texte Band 1 – Texte zur elektronischen und instrumentalen Musik*. Köln: DuMont Schauberg.

The ritual of the electroacoustic concert

Robert Normandeau
Université de Montréal

Robert Normandeau, 1955 in Québec City (Canada). MMus (1988) and DMus (1992) in Composition from Université de Montréal. His work figures on many compact discs among them there are seven solo discs: Lieux inouïs, Tangram, Figures, Clair de terre, Palimpsestes and the DVD Puzzles, published by empreintes DIGITales and Sonars published by Rephlex (England). Opus Prizes from the Conseil québécois de la musique in 1999: «Composer of the Year» and «Record of the year in contemporary music» (Figures) and in 2013 «Record of the year in contemporary music» (Palimpsestes). Prizes: Golden Nica at the Prix Electronica 1996 (Linz, Austria); the First Prize at the Concours international de musiques sacrées 2002 (Fribourg, Switzerland); the production prize at the Giga-Hertz Preis 2010 (Karlsruhe, Germany); the First Prize in mixed music at the Musica Nova 14 competition (Praha, Czech Republic). Masque 2001 and 2005, the best music composed for a theater play. He is Professor in Electroacoustics Composition at Université de Montréal since 1999.

"The medium is the message"

Marshall McLuhan wrote in 1967 that the medium is the message. But the question facing us today, sixty years after the "invention" of electroacoustic music, is what exactly is the medium, and how do the characteristics of that medium differentiate it from instrumental music? One can approach the question in different ways, but certainly one of the most relevant is in terms of considering space as a compositional parameter. It is this dimension that most determines the specificity of electroacoustic music. Composers have clearly adopted the space as an internal writing parameter (Chion: 1988), but what about producers presenting this music in concert halls? Is a conventional hall with a frontal stage well adapted for a spatial representation? Is putting rows of uncomfortable chairs in black-box theatres really a new, attractive and appropriate way to present this music? Do rehearsal practices (or lack of them...) actually reflect the concern of composers working the space parameter in situ?

Concerts in domes of speakers

One possible alternative are concerts using a dome of speakers (Kupper: 1988). What is the specificity and interest of such a dome?

The primary interest lies in the fact that the dome represents a model of our perception in some ways: we stroll around with a permanent perceptual dome around our heads (Sazdov, Paine and Stevens: 2007), since our sound perception is semi-spherical (it could be spherical but in most cases, the ground prevents it). The second advantage is that the physical dome combined with the proper software (Chandrasekhar, Goßmann and Brümmer: 2006; Pulkki: 1997) allows a transfer of works from one hall to another without needing to change the spatial characteristics of the diffusion strategies. In other words, it is already possible to determine a standard in presentation, independent of the venue, as it is done with feature movies. In addition, speaker domes are increasingly present today (we will inventory this, but at the last census, there are at least a dozen).

Unconventional halls...

Another possible alternative is the use of halls that bear no resemblance to the traditional concert hall. Most improvised or live "underground" music now takes place in bars or lofts whose primary function is not musical. Many of these events attract a curious and non-conventional public that

would not necessarily come to a more classic presentation, especially in an academic place.

... off-institutions...

Electroacoustic music has become an institution whose main center of activity is in educational centres and more specifically in the music conservatory and university. These productions seem to want to emulate professional concerts with international guest artists, high quality sound and a captive audience, but they are rather almost always held internally, often without ticket sales and benefitting from little or no advertising, especially towards the general public, who is increasingly difficult to reach. Although this type of concert has a role to play in academia, I believe it is suffocating the genre, folding it in on itself. And except in small towns where the university is often the only producer of musical activity — which always attracts a curious public — most "academic" concerts no longer attract a large audience.

... with active listening

In North America — and perhaps more generally, we should acknowledge that the public no longer sees the concert as a social event in the same way that it has been practiced since the mid-nineteenth century. Today's listeners, and certainly those interested in electroacoustic music, have stood up from their (un)comfortable chairs in order to move around in space, or even to continue living their lives — talking, discussing, answering phones — activities

that are possible in places where omnipresent music does not belong to a musical but social ritual, where the sound amplitude covers the noise. How can we present a music whose low intensity and silent characteristics are covered by ambient noise? From all this, it appears that the ritual of the concert has changed and we must offer smart alternatives to do justice to our practice.

Bibliography

- Chion, M., Les deux espaces de la musique concrète. In Dhomont, F., L'espace du son. Bruxelles: Musiques et recherches, 1988.
- Chandrasekhar, R., Goßmann, J. and Brümmer L., The ZKM Klangdom. Proceedings of the 2006 International Conference on New Interfaces for Musical Expression. Paris: NIME06.
- Kupper, L., Space Perception in the Computer Age. In in DHOMONT, F., L'espace du son. Bruxelles: Musiques et recherches, 1988.
- Meyer, A.-P. 2007. Le Pavillon Philips, Bruxelles 1958.
<http://pastiche.info/documents/philipspavilion58/index.html#>
- Pulkki, V. 1997. Virtual sound source positioning using vector base amplitude panning. Journal Audio Engineering Society 45(6): 456-466.
- Sazdov, R., Paine G. and Stevens, K., Perceptual Investigation into Envelopment, Spatial Clarity and Engulfment in 3D Reproduced Multi-channel Loudspeaker Configurations. Electroacoustic Music Studies 2007. Leicester: EMS.

“Klangkunst“ goes mobile

Fabian Czolbe

Berlin

Fabian Czolbe studied musicology, history of art and philosophy in Berlin. Afterwards completed his Ph.D. in 2011 with the thesis: “Sketch Studies in the Context of Notational Iconicity. A Discourse of approaches exemplified by Sketches of Henri Pousseurs Système des paraboles.”. 2012 he got a postdoc grant, teaches in the Institute of Musicology and Media Studies at Humboldt Universität zu Berlin, and works as freelance musicologist for sound art projects, music in urban environments, as well as music critic.

Since a few years one can notice that Sound Art in different kinds makes use of mobile devices – exhibitions, concerts or installations/environments in the public space can be explored individually by the listener and her/his smartphone. With your mobile device and your headphones, you can walk from one part of an exhibition to another, and while entering a new area the sound starts automatically. Just as well one can start a sound generating app which e.g. makes use of the front camera of your smartphone, and which finally generates a sound atmosphere depending on your real visual surrounding (like some apps of the ZKM AppArtAward). As well one can take the smartphone and start to walk to find some sounds or musical pieces at a specific GPS position in the urban environment (like the “Music From The Cloud“-project of AdK Berlin).

In my talk I will present a choice of works, and point out some consequences for the perception, the analysis and the aesthetic value of a ‘mobile Klangkunst’ from a musicological perspective. Based on a “Taxonomy of Mobile Sound Art” (Behrendt 2010) which supposes four key categories – ‘placed sounds’, ‘sound platforms’, ‘sonified mobility’ and ‘musical instruments’ – I will discuss and expand this theoretical approach. But first I will discuss some questions, as well as perceptual and pragmatic phenomena in the context of mobile Sound Art. What does it mean, e.g. to think about space in that context? It is not a “white cube” with a specific volume and clean walls, it is the real world, e.g. it can be an individual urban space or somewhere in the nature. How does this specific space affect the

perception? What is about the sources? Often soundartists make use of a particular kind of loudspeakers to include the characteristics of these sources, but in the mobile case the listeners have to use their own headphones. What does it mean, if you utilise different open or closed headphones, or headphones of different quality? On the other hand we have to ask for the possibilities of these conditions. How can the interweaving of real and artificial sounds become a compositional or aesthetical aspect? In which way one can compose a piece that may interact with the natural or urban sound environment? As well we have to think about the perceptual modes that create an entanglement of sound and visual layer in the situation of listening.

Finally as scholar I suggest that we should investigate this phenomena in a systematic way, and I will point out some differences between Sound Art, Sound Walk, Sound Art in public space, and something may be called ‘mobile Klangkunst’. Furthermore, we need a terminology that open up a scholarly discussion about an aesthetic criticism concerning these phenomena.

References:

Brown, Harry et al. (Hg.): Wireless World. Social and Interactional Aspects of the Mobile Age, London 2002.

Behrendt, Frauke (2010): Mobile Sound: Media Art in Hybrid Spaces, Ph. D. Thesis, University of Sussex, April 2010.

Hemmet, Drew (2006) : Locative Arts, in : Leonardo, Vol. 39, No. 4, pp. 348-355

Evaluating Acousmatic Compositional Strategies within Public Sound Art

Peter Batchelor
De Montfort University, Leicester

Peter Batchelor is a Senior Lecturer in Music, Technology and Innovation at De Montfort University, Leicester. He studied with Jonty Harrison and Andrew Lewis and, having completed a PhD in composition at the University of Birmingham, joined the team at De Montfort in 2003.

His creative work draws strongly on the aesthetics and compositional concerns of the acousmatic tradition, but uses this heritage as a springboard to investigate a variety of other genres and presentation formats for electroacoustic media including radiophonic documentary, live-electronics and improvisation, multimedia and large-scale multi-channel installation work. More recently his interest has shifted towards site-specific public (sound) art, including the fabrication of aural landscapes and sonic illusion (trompe l'oreille).

His work has received recognition from such sources as the Concours de musique electroacoustique de Bourges and the International ElectroAcoustic Music Contest of São Paulo and has been presented internationally.

Composing acousmatic music typically involves the development of extremely rich, complex and immersive sonic environments which, by virtue of their use of 'found' materials, regularly refer to the real world. These various presented sonic environments are in turn woven together—transitions between unrelated sounds accommodated by, for example, common spectromorphological characteristics—to create often surreal/ephemeral evolutionary narratives governed by higher-level conceptual and aesthetic concerns determined by the composer. Analytical theory continues to develop around such practice (as established in Emmerson 1986; Landy 1994; Smalley 1986, 1997 and others), seeking to establish, for example, common or universal principles governing compositional decision-making in the combination/juxtaposition and evolution of believable sonic environments, along with the relationships between these and more spectromorphological (musical) discourse. Recent installation projects that I have undertaken involving massively multichannel speaker setups have prompted me to consider the implications of the use of such compositional strategies—to which I shall refer as 'ephemeral narratives'—

enhanced by rich spatial deployment—in presentation contexts outside the concert hall. Presented within (ideally public) spaces in which the realistically-portrayed phenomena inhabiting these narratives might naturally occur, the fabrication of believable aural landscapes using such systems might, through various means, encourage reflection on—via a re-experiencing of—everyday environmental sound phenomena. Nevertheless, they are subject to evolution through time governed by similar compositional strategies as those that might be used in work produced for the concert hall. I have proposed elsewhere that such an approach potentially provides a means of uniting acousmatic and soundscape compositional concerns with those of acoustic ecology (Batchelor 2007). But the use of fixed presentation formats and narrative frameworks that are fundamental to traditional acousmatic compositional practice are generally deemed to be inappropriate (and are certainly unfashionable) within the more dynamic and changeable context of everyday/public environments, since they limit immediacy and the responsiveness of the musical material to changing environmental

conditions within these spaces, along with interactivity with their inhabitants (the public).

Thus this paper explores the notion of ephemeral narrative as a compositional strategy within the framework of installation and public art. It explores a theoretical and methodological background to such practice and explores technical and aesthetic issues related to its application. It also questions the extent to which such strategies remain viable and effective within installation contexts while investigating how they prompt the development of existing analytical theory relating to electroacoustic compositional practice.

Selective bibliography:

Batchelor, P. 2007. "Really hearing the thing: an investigation of the creative possibilities of trompe l'oreille and the

fabrication of aural landscapes". Proceedings of the 2007 Electroacoustic Music Studies Conference. Available at: www.ems-network.org/spip.php?article289

Emmerson S. 1986. "The Relation of Language to Materials". In Emmerson S, *The Language of Electroacoustic Music*. London: Macmillan. 17-39.

Landy, L. 1994. The "something to hold on to factor" in timbral composition. *Contemporary Music Review*, 10(2), 49-60.

Smalley, D. 1986. "Spectro-morphology and structuring processes". In Emmerson S, *The Language of Electroacoustic Music*. London: Macmillan. 61-93.

Smalley, D. 1997. Spectromorphology: explaining sound-shapes. *Organised sound*, 2(2), 107-126.

Playing Loudspeakers, Unsettling Concerts Gender and Performance in Interdisciplinary Electroacoustic Music

Hannah Bosma
Amsterdam
mail@hannahbosma.nl

Hannah Bosma defended her doctoral dissertation The Electronic Cry: Voice and Gender in Electroacoustic Music at the University of Amsterdam in December 2013. Her articles on gender and electroacoustic music are published in The Routledge Companion to Sounding Art (ed. by M. Cobussen, V. Meelberg and B. Truax; Routledge, forthcoming 2015), in Cathy Berberian: Pioneer of Contemporary Vocality (ed. by P. Karantonis, A. Sivuola, F. Placanica, P. Verstraete; Ashgate, forthcoming 2014), Sonic Mediations: Body, Sound, Technology (ed. by C. Birdsall and A. Enns; Cambridge Scholars Publishing, 2008), Intersections 26/2 (2006) and Organised Sound 8/1 (2003), i.a. From 1998 to 2013, she was project manager and specialist electroacoustic music (NEAR) at the former Dutch music institute Donemus / Music Center the Netherlands. She initiated the starting Stichting DEARrr (Dutch Electro-Acoustic Resources, repertoire and reflection). Currently, Remko Scha and Hannah Bosma are preparing a project on voice synthesis (University of Amsterdam).

Where and how to find gender in electroacoustic music, its practices and performances? In my research on electro-vocal music, the voice is an entry point to discuss gender in electroacoustic music. (Electroacoustic music may seem abstract or “neutral”, but voices are clearly gendered.) One of my conclusions is that musical and vocal gender stereotypes are encountered more often in rather traditional concert settings, while breaches in gendered conventions mainly occur in electroacoustic music when ontological and institutional changes are at stake, such as the departure of the concert stage, of the musical score and of the concept of the musical work, the changing roles of the creators, and interdisciplinarity (Bosma 2013, 2006, 2003).

Here, I will further elaborate on the relation of gender to fundamental aspects of electroacoustic music, related to discourse, technology, performance and signification. This paper offers a preview of some aspects discussed in my forthcoming article on gender for the *Routledge Companion to Sounding Art* (ed. by Marcel Cobussen, Vincent Meelberg and Barry Truax, 2015).

In electroacoustic music there is a strong modernist strand, with a discourse that (over)emphasizes formalism, objectivism

and technology. This seemingly abstract or “neutral” discourse, however, is related to masculinity (Bosma 2013). Tara Rodgers (2010) argues that the audio-technical discourse consists of metaphors that relate sound to masculinity and colonialism. Thus, gender turns out to be a constitutive factor in the heart of electroacoustic music.

Performance is both fundamental to music and to gender. Music is considered a performing art; however, this is not self-evident for electroacoustic music and sound art – indeed, this genre, as well as this conference, invites us to reconsider the notion of musical performance. Gender is performative, according to Judith Butler: gender is continuously re-established or re-performed, but can also change by its performativeness. The performing arts and the performativity of gender imply different notions of performance. While the performativity of daily life and culture at large, including gender, goes by mostly unnoticed or unreflected, the performing arts provide occasions to focus and reflect on performance. Can new conceptions of performing music, with or by sound technology, go with changes of gender performance?

I discuss these issues by focusing on electroacoustic practices that critically reflect

on or play with concert performance and related electroacoustic practices.

The first example elaborates on the different ways in which Huba de Graaff (*Lautsprecher Arnolt*, 2004) and Cathy van Eck present loudspeakers on stage as musical-theatrical instruments. I show how their work is positioned differently with respect to the main modernist technological discourse of electroacoustic music and how their use of loudspeakers relates to gender issues. De Graaff stages loudspeakers as theatrical personae and shows excessive masculinity going rampant. Van Eck casts loudspeakers as musical instruments that change the notion of performance itself, including its gendered aspects.

My second example relates Cathy van Eck's *Hearing Sirens* (2007) and *Extended Ears* (2013) to soundwalks. Andra McCartney (2014) shows that many of the major figures in the field of soundwalking are women, such as Hildegard Westerkamp and McCartney herself. The Dutch artist Cilia Erens and the Soundtrackcity Amsterdam project offer other conceptions of the soundwalk. Cathy van Eck turns the soundwalk –as it were– inside out and adds another layer to this multifarious genre. In *Hearing Sirens*, for a spatial-acoustic discovery of the environment, she wears large yellow loudspeaker horns on her back that emit clicks and other sounds. *Extended Ears* offers different listening experiences of the environment by transforming the sense of hearing by horns, by a portable microphone-loudspeaker instrument, or by a live electronic processing iPhone app. As McCartney remarks, implicit in soundwalking is that a woman's presence on the streets is marked by her gendered visibility; walking with large horns, Van Eck adds an extra dimension to her visibility.

I find references to gender issues in the work of Huba de Graaff and Cathy van Eck that relate to fundamental aspects of electroacoustic music, at different levels:

- explicit and implicit references to gender (in sound, image, text, performance);
- reconfigurations of gendered musical practices related to authorship, composition, performance, the musical work, enabling, audience, musical genre, listening, technology.

A focus on gender may reveal unsettlements of fundamental ideas on and in electroacoustic music.

Selective bibliography:

Bosma, H. 2003. Bodies of evidence, singing cyborgs and other gender issues in electrovocal music. *Organised Sound* 8/1: 5-17.

— 2006. Musical washing machines, composer-performers, and other blurring boundaries: How women make a difference in electroacoustic music. *Intersections: Canadian Journal of Music* 26/2: 97–117.

— 2013. *The Electronic Cry: Voice and Gender in Electroacoustic Music*. PhD. dissertation, University of Amsterdam (NL).

van Eck, C. 2013. *Between Air and Electricity: Microphones and Loudspeakers as Musical Instruments*. PhD. dissertation, University of Leiden (NL).

McCartney, A. 2014. Soundwalking: Creating moving environmental sound narratives. In S. Gopinath and J. Stanyek (eds.), *The Oxford Handbook of Mobile Music Studies Volume 2*. Oxford, New York: Oxford University Press. pp. 212–237.

Rodgers, T. 2010. *Synthesizing Sound: Metaphor in Audio-Technical Discourse and Synthesis History*. PhD. dissertation, McGill University, Montreal (CA).

Louis and Bebe Barron's "Electronic Sound Images" for the Science-Fiction Movie "Forbidden Planet" (1955/56)

Volker Straebel
Technical University, Berlin

Volker Straebel (1969) is a musicologist focusing on electro-acoustic music, the American and European avant-garde, intermedia, performance and sound art. He is director of the Electronic Music Studio at Technische Universität Berlin and lectures at Sound Studies at Universität der Künste Berlin. He has realized and performed indeterminate works by John Cage and himself.

Louis and Bebe Barron's soundtrack for the MGM science fiction film "Forbidden Planet" (1956, directed by Fred M. Wilcox) became famous for being the first soundtrack of a feature length film to consist exclusively of electroacoustic music. Influenced by the concept of feedback in Cybernetics (Wiener 1948/61), the sounds were produced by means of electronic circuits whose output were recorded and subjected to basic tape manipulations. The film score establishes a system of leitmotifs that are connected to characters, places and situations. While previous research, mostly based on oral history, has given much thought to sound synthesis and technology of production, and, more recently, to musical form as well as intermedial aspects of film music (Barron 1997; Leydon 2004; Wierzbicki 2005), this paper presents for the first time written material from the composers's archives.

The private, unprocessed collection contains diverse material, ranging from correspondence (including drafts), minutes and shipping records to notes on leitmotifs, annotated cue sheets and mixing scores. Drawing from a philological analysis of music-related notes and the cue sheets, one is able to re-construct the Barrons's approach to composite material from a pre-fabricated pool of motifs and atmospheres. The notes seem to give evidence to the fact that this material had been created specifically for the purpose of being combined, altered and

superimposed. The mixing scores, finally, define the relation of the different layers of sound at work in the sound track and provide a better understanding of the production process.

At this point, I can only give some first insight into this research which is still undergoing. More detailed work will depend on a complete catalog of notes and annotations related to the leitmotif technique and that consider their chronological order so that one can understand how the work on the sound track shaped, through several revisions, the very material it is based on.

Selective bibliography:

Barron, Bebe, and Mark Burman 1997. "Making Music for 'Forbidden Planet'. Bebe Barron interviewed by Mark Burman", in *Projections. A forum for film-makers*, 7, 252-263.

Leydon, Rebecca 2004. "'Forbidden Planet': Effects and Affects in the Electro Avant Garde", in *Off the Planet. Music, Sound and Science Fiction Cinema*, edited by Philip Hayward. London: John Libbey, 61-76.

Wiener, Norbert 1961. *Cybernetics or Control and Communion in the Animal and the Machine* [1948]. Cambridge, Mass.: MIT Press

Wierzbicki, James Eugene 2004. *Louis and Bebe Barron's Forbidden Planet. A Film Score Guide*. Lanham, MD – Toronto – Oxford: Scarecrow Press.

Searching for Safety: The concert listener beyond the limits of the concert hall

Tatjana Böhme-Mehner
Martin-Luther-Universität, Halle-Wittenberg (Germany)

born 1976 in Gera (East Germany), musicology and journalism studies at Leipzig University; Master and PhD degree; specialization in electroacoustic music, music theory, music sociology, music and media; since 2003 PostDoc research project on electroacoustic aesthetics in France and Germany. 2005/06 DAAD/MSH Research Fellow at MSH in Paris. Cooperation with Ina-GRM, MINT-OMF (Sorbonne) and CIERA; since 2006 associated member of MINT and CIERA. Member of DEGEM, GfM, EMS. Wide range of publications and projects, paper presentations. Giving lectures and courses at several German Universities. Recently intensifying activities as a composer, performances of acousmatic pieces at several festivals, participation in selected projects combining theory, composition and education.

There are not many institutions which are as established in the music market as the traditional concert in the field of so-called ‘serious’ music. Thus, anyone going to buy a concert ticket usually knows – more or less – what they will get. The purchase will include a kind of unofficial guarantee: about two hours of announced sound art, which can be enjoyed as part of a group of people of more or less the same cultural background. Even if many forms of presentation do not feature in this concept – partially or even more generally – this model is the basis of the western music system.

Buying a concert ticket thus usually means making a communicational arrangement, in order to draw the line between the possible and the impossible. It is expected that people knowing about the ritual and thus will clap at the right moment, not eat popcorn and listen. Meanwhile, the listeners – even if the question of artistic quality is not the first priority of this ‘contract’ can be sure that they will find themselves in the expected communicational position. Usually they can be sure that they will not to be blamed for any direct and personal address or participation outside of the group. Thus, they expect a special communicational frame at all. For this expectation and the ways people may file a suit for it, some examples from my own work experience in the field as a concert reviewer will be given.

From there the communicational arrangement is analysed, and whatever intention the listener may have towards making this arrangement can be

shown. It appears to be a search for safety. Every presentation project – even if it questions one or more parts of what is guaranteed – deals with this contract. The aesthetic positions of artists who participate have already been analysed from several perspectives. In this paper I will question the role of the listener within this arrangement.

In order to pay tribute to the place where this year’s conference is being held, I have selected two very different examples found within German province to demonstrate in a more detailed way how electroacoustic – or more generally experimental – music can profit from this communication constellation and the attached expectations. But maybe even traditional classical music is not excluded per se. Both are part of a festival which has been established for one and half decades in a village near the former East-West German border: the Thuringian Stelzen. By introducing the impressive and strange history of a cult event (which nowadays attracts people not only from the region) it is shown how the communicational contract mentioned above can itself become the topic of presentation, and how this can guide the listener beyond the limits of the concert hall.

1. The traditional ‘Landmaschinen-sinfonie’ (Symphony of agricultural machines) is a cooperative art-work which was initiated by the sound artist Erwin Stache – employing a special kind of sampling but which explicitly plays with the

expectations of concert listeners and which integrates unusual artists.

2. Whether Johann Sebastian Bach can be seen as part of an electroacoustic artwork is one of the questions posed by the analysis of this example. The ‘Bach-Wiese’ (German speakers may find a play on words within this title) is a prototype of an example of presentation over an extended duration. The complete works of Johann Sebastian Bach played from loudspeakers within lovely countryside attracted a huge number of listeners – even campers who had come just to hear this.

Selective bibliography:

H.-E. Bödeker, P. Veit, M. Werner (Eds.):

Organisateurs et formes d’organisation du concert en Europe 1700 – 1920.

Institutionnalisation et pratiques. Berlin: BWV, 2008

H.-W. Heister: Das Konzert. Theorie einer Kulturform. Heinrichshofen: Noetzel, 1983

W. Salmen: Das Konzert. Eine Kulturgeschichte. München: Beck, 1988

H. Neuhoff : Konzertpublika, Sozialstruktur, Mentalitäten, Geschmacksprofile.

http://www.miz.org/static_de/themenportale/einfuehrungstexte_pdf/03_KonzerteMusiktheater/neuhoff.pdf

How to Think Sound in Itself? Towards a Materialist Dialectic of Sound

Luc Döbereiner

*Luc Döbereiner (*1984) is a composer and researcher from Berlin. He studied at the Institute of Sonology in The Hague and holds a doctoral degree from the University of Music and Performing Arts Graz. His work is concerned with compositional models and explores the relation of the materiality and the ideality of sound in musical composition. His artistic thought is constituted in the oscillation between aesthetic theory, technological development, and compositional practice. Döbereiner has published articles in journals such as Computer Music Journal, Contemporary Music Review and kunsttexte.de*

His compositions have been performed by ensembles such as unitedberlin, Sond'Ar-te, Modelo62 and by players such as Frank Gutschmidt, Martin Lorenz, Akane Takada, and Karolina Öhman. His works have been performed and presented among others at CTM Berlin, the ISEA, ZKM Karlsruhe, Make Art Festival Poitiers, on Deutschlandradio Kultur, Computing Music Cologne, in the Maison de la Radio Geneva, the Goethe-Institute Lisbon, and the Gare du Nord Basel.

Diverse practical and theoretical approaches to sound art and electroacoustic music composition developed in the 20th and 21st centuries can be seen as different attempts at defining a "materialism of sound," i.e. as striving to reveal or get through to "sound's being." The idea of overcoming representation, hence, unites a great number of otherwise dissimilar artistic approaches. The rejection of symbolization asserted by the Schaefferian *objet sonore*; the increased focus on experience, perception, and embodiment in recent sound art; the experiments in sonification and audification of otherwise inaudible signals; the treatment of audio recordings as "non-representational sound matter" (Francisco López); the Varèsian "liberation of sound"; and the material emergence of timbre and form (Agostino Di Scipio) may serve as examples of artistic practices directed towards grasping the materiality of sound. Yet the question of how to think "sound in itself" is simultaneously what fundamentally distinguishes these approaches. The specific ways of answering the question of how to

think sound as material both in artistic practice as well as in theory can be said to constitute and differentiate a great part of the artistic and theoretical positions in contemporary sound art and electroacoustic music.

In recent years, there has been a growing interest in philosophy, science studies, psychoanalysis, arts, and political theory in new formulations of materialism from a number of otherwise irreconcilable theoretical positions (et.al. Slavoj Žižek, Manuel DeLanda, Quentin Meillassoux, Karen Barad, Alain Badiou). Likewise in the field of theoretical sound studies, a number of competing formulations of a "sonic materialism" have been brought forward in recent years. Sound artist and theoretician Salomé Voeglin works at a formulation of a sonorous materialism, which focuses on the ephemerality, contingency, and event-like character of listening and Brandon LaBelle understands the materiality of sound as an intersection of physical, psychical, and affective spatialities. Of central importance for this paper is the position of the

philosopher Christoph Cox, who has recently proposed a "sonic materialism" as a theoretical model for thinking the arts beyond representation and signification. Instead of reading (sound) art works as "complexes of signs and representations," Cox argues for a treatment of art works as complexes of material forces. Drawing on the work of the philosopher Gilles Deleuze, Cox thus tries to abandon the "idealist language of signification" and develop a materialist, realist perspective on art works in terms of material forces and dynamic flux. While agreeing with the basic, "anti-representational" orientation of Cox's argument, I will attempt to challenge it and outline an alternative "onto-aesthetic" perspective: a "dialectical" materialism of sound. In doing so I will try to firstly break away from the Deleuzian materialism rooted in a conception of a "univocity of being", a "vitalistic" Whole, which abandons the irreconcilability of the Symbolic and the Real.

With reference to the philosophers Alain Badiou, Slavoj Žižek, and Hegel, I will rather proceed from a split and a conception of the Real as tied to a void, an impossibility or failure in the Symbolic itself. I will thereby argue for the necessity of symbolization in music or sound art, while distinguishing between a representational symbolization, which is also the realm of meaning and semantic signification, and an operational formalization, which is here

understood as moving beyond representation and meaning, but via the Symbolic itself. The materialist account of sound proposed will thus neither assume a pre-symbolic "sound in itself" nor a sound matter equated with material forces, nor a mechanistic, objective "sound matter," but rather an always already compositionally mediated material. The Real can only be grasped through symbolization, or as the psychoanalyst Jacques Lacan stated: "The real only manages to be inscribed through an impasse of formalization."

Selective bibliography:

Alain Badiou, *Theory of the Subject*, trans. Bruno Bosteels (London: Continuum, 2009).

Christoph Cox, "Beyond Representation and Signification: Toward a Sonic Materialism," *journal of visual culture* 10, no. 2 (2011): 145–161.

Gilles Deleuze, *Difference and Repetition*, trans. by Paul Patton. (London: continuum, 2004).

Georg Wilhelm Friedrich Hegel, *Enzyklopädie der philosophischen Wissenschaften im Grundrisse II. Theorie* Werkausgabe Band 9. (Frankfurt am Main: Suhrkamp, 1979).

Slavoj Žižek, *The Parallax View* (Cambridge, MA: MIT Press, 2006).

Reasons for the Occurrences of Synthesized Referential “Real-World” Sounds “Outside” of Electroacoustic Music Concert Hall

Olaf Hochherz
City University of Hong Kong

Olaf Hochherz lives in Hong Kong. He is a sound artist and researcher mostly performing with self build electronic instruments and computer programs. Develop installations and performance installations. He is interested in the conjunction of the instability and associative capacity of sounds. He got educated at Folkwang Hochschule Essen in electronic composition, Humboldt University Berlin in philosophy and computer science and at Bauhaus University Weimar in sound-art/media-art. Currently works on his PhD research about Imitation in Sound Art at City University of Hong Kong. He presented his electronic compositions at different Festivals. His installations could be realized in Kassel, Taichung and Shanghai. He toured with his performances throughout Central Europe and East Asia.

I will present my examination on influence of technology and context on the meaning of sounds. In particular the question: why did in the 1960s the first occurrences of synthetic sounds referencing natural real-world sounds (such as bird-calls) appeared outside of the frame of the electroacoustic music concert? I will focus on two historic examples: the Mixturtrautonium of Oscar Sala as used in the soundtrack of the Hitchcock movie *The Birds*, and David Tudors' electrical sound circuits in *Rainforest 1*. The specific questions I aim to answer are as follows: (1) did synthesizers usher in new ways of understanding imitations of “real world” sounds? (2) In what manner did the mode of presentation itself, namely, the film-soundtrack and the sound installation, support the interpretation of sounds as imitation in the two examples cited? We describe the dependency of the meaning of an imitational reference on the materiality of the instrument and extra-musical conditions of the works where they are used in. Peirce provided a formal system to describe semiosis, which he also defines as sign-activity. With his categories of modes of reference, which he defines in his speculative grammar on the elements of

semiosis, he introduced concepts how signification can be differentiated. In a first step he introduced a classification, which distinguishes between icon, index and symbol. I will apply this categorization on the semiosis of sounds in artistic expressions. I am following Peirce in the idea, that semiosis is a triadic, time-bound, context-sensitive, interpreter-dependent, materially extended dynamic process. My argument is based on the assumption, that signs are multi-stable, which means it is inherent to a sign, that it can always be read in different ways and that it is the context of a sign, which provides the necessary stability to the multiplicity of possible interpretations. I will first look what synthesizers introduce new to the interpretations of sounds as imitations of real-world sounds. How they problematize the relation between sound and source. And how we can describe, that this relationship also affects interpretation of sounds as imitations. I will then look how context introduces a multi-modality, that has the potential to stabilize possible interpretations. I conclude, that synthesizers, compared to acoustic instruments, introduced a more complex relationship between sound and its reality, and that

explicit inclusion of context through multi-medial contextualization introduce a stabilization of the meaning through multi-modality. Following this I argue, that imitation changed its position in artistic expression, and that the imitation of real-

world sounds with synthesizers exemplify well the interrelations between iconic, indexical and symbolic interpretation of signs, their context-dependency and situatedness.

The Shock of Risk

John Young

Music, Technology and Innovation Research Centre
De Montfort University

*John Young is Professor of Composition at De Montfort University, Leicester, UK. His music focuses on the use of electroacoustic media as a means to explore the richness, complexity and affective meanings of natural sounds. His output includes multi-channel electroacoustic pieces, large-scale radiophonic work and music combining instruments and electroacoustic sounds. He has written on a range of topics, most recently on the idea of the sound-image, form in electroacoustic music and the creative process in musical research. He has received a number of international awards, including the 2010 Euphonie d'Or of the Bourges International Electroacoustic Music and Sonic Art Competition, and has been a guest composer and/or teacher at numerous institutions around the world. Notable commissions have come from the Ina-GRM, the IMEB and Radio New Zealand. Two solo discs of his work are available on the Empreintes Digitales label: *La limite du bruit* and *Lieu-temps*. http://www.electrocd.com/en/bio/young_jo/discog/*

This paper contends that risk is an important element in our appreciation and understanding of art works and examines the idea and perception of risk within acousmatic music. The chief value of artistic risk is arguably its role in connecting the experience of art with lived experience. Risk, when recognised, has the capacity to become a wider metaphor for confrontation with the uncertain, the threatening, or that which is desirable, but whose attainment carries danger in the form of significant potential for failure and/or harm. But in an artistic context—at least from an audience's normative perspective—the artwork imparts risk as something experienced vicariously. In contemporary artistic contexts, risk is perhaps most readily appreciated through procedures associated with performance: physical or psychological risks taken in the embodied realisation or presentation of a work. This feeds the enjoyment of performance as spectacle as well as appreciation of the moment-to-moment negotiation of changes in the physical, ensemble or wider aural environment in which the performer operates. In electroacoustic music, this *procedural*

dimension is certainly the sense in which risk is most commonly understood. The frailty and capacity for unreliability in human/machine interaction can lead to situations where computer responsiveness may cease, surges of uncontrolled feedback or even the presence of dangerous voltages, along with more traditional issues of risk in performance—something may ‘break’, there is a departure from the ‘score’ or from what was rehearsed, or a tenuousness is created through extremes of difficulty imposed on the musician.

More generally in musical situations risk is most frequently encountered in what Blocker (2008) describes as *rhetorical risk* where, aesthetically distanced, it is represented through syntactical contrivance, drawing on a listener's engagement with music as both a temporal and semantic experience—the implications of events and possible future predictions and expectations. While Cage (1981) rejected the significance of musical discourse in those terms by drawing a parallel with dance (suggesting that it matters if two dancers collide because of the risk of physical injury—to which sounds are not susceptible), Lukas Foss (1972)

whimsically challenged many of the control-relinquishing innovations associated with Cage: ‘Silence is safe, even virtuous. Show me dangerous music’. The rhetorical projection of risk is nevertheless an important aspect of musical discourse that links both romantic emotive force (as in the celebrated ‘resolution’ of dissonance in the first movement of the ‘Eroica’) and modernist harmonic tension and distortion.

At first glance, acousmatic music might appear to be a musical domain that epitomises non-risk, certainly of the procedural kind, with music created in the coolness of the studio and committed to the permanence of a fixed medium. Yet the close connection with the natural soundscape that acousmatic music has grown up with carries implicit risks in content and the challenge to invest something of an original listening experience in a completed work, as well as carrying procedural risk in capturing sound in difficult social or environmental contexts. But, more importantly, the range of materials opened by sound recording invites new kinds of risks in content. Highly personalised or autobiographical material and political statements epitomise domains of risk that exist through the use of referential content, whilst the extremities of sound’s typological

forms—over-original and unpredictable objects in Schaefferian terms—beckon as materials that implicitly carry compositional risk because of the difficulties they present for musical integration and comprehension. Nonetheless, in the spirit of Foss’s challenge to a normative view of innovation mentioned above, easy solutions to rhetorical risk in acousmatic music can be identified: extremes of unchanging sonority or textural density, and over-differentiation of sound sources, for instance. Critical evaluation of several works from the acousmatic repertoire is offered in providing a balanced view of how the constructive features of risk might be recognised, managed and productively exploited within an acousmatic form.

Selective bibliography:

Blocker, J. (2008) Aestheticising Risk in Wartime: The SLA to Iraq. In Welchman, J. (ed.), *The Aesthetics of Risk*. Zurich: JRP/Ringier.

Cage, J. with Charles, D. (1981) *For the Birds*, NY: Marion Boyars.

Foss, L. (1972) Sleeve notes to *Paradigm*, On *The Contemporary Composer in the USA*, Turnabout TV-S 34514, LP recording.

Notating the Sonic Environment

Dr. Lindsay VICKERY
Edith Cowan University

Lindsay Vickery is an Australian composer, performer and academic. His music includes works for acoustic and electronic instruments in interactive-electronic, improvised or fully notated settings, ranging from solo pieces to opera and has been commissioned by numerous groups for concert, dance and theatre. He is also a highly regarded performer on reed instruments and electronics, touring as a soloist and with ensembles in many parts of the world. His current compositional preoccupations include the relationship between modes of presentation of the musical score and musical structure, between electronic/acoustic, composed/interactive and interpretative/improvisational approaches. Most recently, his research interests have focused on the emergence of the “scorescore”, nonlinear music and the realisation of Cage’s music. He holds an MMus degree in composition from the University of Western Australia and a PhD from the Queensland University of Technology. Vickery is currently the coordinator of Composition and Music Technology at Edith Cowan University in Perth.

Emulation of the sounds of the natural environment may be one of the earliest manifestations of music. Alvin Lucier’s (*Hartford*) *Memory Space* (1970) and *Carbon Copies* (1989) both explore this impulse, instructing performers to imitate the sounds of any indoor or outdoor environment (albeit pre-recorded), “as exactly as possible, without embellishment” (Lucier, A. 1989. *Carbon Copies*. Material Press: Frankfurt am Main). This final clause may have been necessary because the complexity of natural sonic environments often prohibits exact imitation and encourages embellishment.

This paper describes a scoreplayer implemented in MaxMSP, that analyses and visualises significant features of a sonic environment as a graphic score, that is scrolled from right to left across the computer screen. Playback of the source recording is delayed so that it is heard as the corresponding visual event arrives at the “playhead”: a black line of the left of the screen.

The frequency of principal features of the recorded environment are represented every 10ms by the placement of rectangles

in vertical space, amplitude by the size of the rectangle, and the brightness, noisiness and bark scale value of each event as the luminance, hue and saturation of each rectangle. The final three parameters provide an indication of timbral changes in the source recording.

An analysis panel provides controls for the performer to view and scale raw data from the field recording. This allows for the performer to “zoom” the visualization in or out on a particular ranges of frequency, amplitude, brightness, noisiness and bark scale data.

The recording is also analysed using Masayuki Akamatsu’s aka.listen extension to detect recorded speech or speech-like artifacts (Electronic Voice Phenomenon) that may be present. These are represented in the score as standard text that is visualized using the frequency, amplitude, brightness, noisiness and bark scale values that are applied to non-speech sounds.

While not strictly “real-time” (recorded sounds are delayed by 12 seconds), this environmental sound scoreplayer allows performer(s) to engage with natural sonic environments in a site-specific manner, using field recordings and sonorous objects

from the vicinity of a performance. It provides a mechanism for the performance of, or improvisation around, significant sonic features from the natural environment.

The work was commissioned by percussionist Vanessa Tomlinson for her Australian solo percussion program *Eight Hits*. The proposed performance practice for the work was developed by the authors during Tomlinson's residency at the *Orpheus Instituut for Advanced Studies & Research In Music*. It requires that Tomlinson make a field recording and collect objects to play in the vicinity of each new performance venue. Familiarity with the recording and strategies for improvising with it may be developed subsequent to its performance.

Selective bibliography:

Vickery, L.R. (2012). The Evolution of Notational Innovations from the Mobile Score to the Screen Score. *Organised Sound* 17(2)(128-136). Cambridge University Press.

Vickery, L.R., Hope, C.A., James, S.G. (2012). Digital adaptations of the scores for Cage Variations I, II and III. Proceedings of the *International Computer Music Conference 2012*, 426-432. Ljubljana.

Vickery, L.R. (2012). Adapting John Cage's Radio Music for a digital score player. Proceedings of the *Australasian Computer Music Conference 2012* 69-77. Griffith University, Brisbane, Australia.

Vickery, L.R. (2011). The Evaluation of Nonlinear Musical Structures. *Sound Scripts: Proceedings of the 2011 Totally Huge New Music Festival Conference* 4(74-84). Perth.

Vickery, L.R. (2011). The possibilities of novel formal structures through computer controlled live performance. Proceedings of *Australasian Computer Music Association*, 112-117. University of Auckland.

Digital Music, Digital Distribution

Tom Adams

University of Huddersfield

Monty Adkins

University of Huddersfield

Tom Adams currently lives and studies in Huddersfield. One half of ambient duo Hollow Mountain, shredder for avant-jazz band Space Flight, and solo artist in his own right, Tom has long had a history of being a collaborator across a variety of mediums – working with poet Patrick Widdess as ethereal sonic sidekick, being part of the orchestra commemorating Scott Polar’s expedition across Greenland, and finally his latest project; soundtracking Hollywood indie flick ‘The Knife That Killed Me’, is released in early 2014. He also performs and releases music as Toma and The Mountaineering Club Orchestra. He is currently studying for an MPhil in audio-visual composition with Dr. Julio D’Escrivan at the University of Huddersfield.

Monty Adkins is a composer, performer and professor of experimental electronic music. His work is characterised by slow shifting organic textures often derived from processed instrumental sounds. Inhabiting a post-acousmatic sensibility, his work draws together elements from ambient, acousmatic and microsound music. Adkins has worked collaboratively on a number of audio-visual projects, including Four Shibus with the painter Pip Dickens and most recently with composer/digital artist Julio d’Escriván. Adkins has been commissioned by the BBC, Radio 3, IRCAM and INA-GRM amongst others. His most recent albums are published by Audiobulb and Cronica.

Although multichannel concert performances of new works continues to be the predominant means for the presentation of new electroacoustic works on systems such as the HISS (Huddersfield Immersive Sound System), BEAST (Birmingham Electroacoustic Sound Theatre) and MANTIS (Manchester Theatre in Sound) by far the majority of new music is listened to in a personal space often via headphones and is either increasingly streamed digitally via a subscription service or purchased in a digital format.

In 2011 Bjork released the multi-platform album *Biophilia*. Although released on CD, the main marketing and artistic focus was on the Biophilia APP – a means of listening, exploring and remixing the music on the album in a unique interactive and personal manner. Since then the most ambitious follow up to this has been Lady Gaga’s ARTPOP APP released in 2013. The APPstore listing for this states that ‘Lady Gaga brings you a musical and visual engineering system that combines music, art,

fashion, and technology with a new interactive worldwide community - ‘the auras’. Altering the human experience, we bring ARTculture into POP in a reverse Warholian expedition.’

Alongside these developments, which pose both interesting aesthetic questions regarding art vs. pop, the ergonomics of interactivity and experience design and the additional involvement of a multitude of software and design companies to bring the ‘album’ to market, there have been other commercial artists that have embraced less costly technology. The most prominent of these has been the iBook.

Artists as diverse as Shinedown, Coldplay, KISS, Jason Collett, Karl Hyde and Brad Paisley have all released iBooks in 2012-2013 to accompany the release of new albums. These range from Collett’s modest 21-page ‘Uncover the Album’ to accompany his *Reckon* release, to Coldplay’s expansive 183-page audio-visual ‘Mylo Xyloto Live’. All of these provide exclusive audio and video footage, interviews, articles and a

plethora of photographic documentation of the making of the album. Their ambition is evident in Shinedown's iTunes marketing tagline,

Remember the days of poring over your favorite band's expansive album artwork and liner notes while listening to the music, trying to get a deeper sense of what went into the creation of the record? Multi-platinum rock band Shinedown wants to bring that experience back – but in a bigger, better, and fully immersive way, only for the iPad.

Thus far, iBook and APP technologies have been predominantly adopted for new music releases by commercial artists as additional content marketing tools. This paper examines the scope of the releases above and presents two examples by the authors of use of the iBook as the primary means for

disseminating new artistic work. Adam's new audio-visual project stemming from his work in the duo 'Hollow Mountain' and Adkins' *Rift Patterns* (Audiobulb, 2014) involving photographer Stephen Harvey, writer Deborah Templeton and video artist Jay Payne will be discussed in detail.

Stuart Dredge writing about Lady Gaga's ARTPOP release in the Guardian on 11th November 2013 stated that, 'Apps certainly aren't replacing albums any time soon (if ever), but as an interactive companion, this is an innovative and interesting step forward.' What the authors want to propose in this paper is that the iBook offers a distinctive medium for new artistic exploration that moves beyond the album as a purely musical release. It also questions what it means to release something native to the digital domain rather than merely providing digital audio files in an analogue to the physical CD.

Composer as curator: uncreativity in recent electroacoustic music

Aaron Einbond
Harvard University

Aaron Einbond's work explores the intersection of composition, computer music, music perception, field recording, and sound installation. He is currently a 2013 Guggenheim Fellow and Visiting Lecturer on Music at Harvard University. He was born in New York in 1978 and has studied at Harvard, the University of Cambridge, the University of California Berkeley, and IRCAM in Paris, with teachers including Mario Davidovsky, Julian Anderson, Edmund Campion, and Philippe Leroux. From 2009–2011 he was Mellon Postdoctoral Fellow in Music at Columbia University and from 2012–13 he was Research Fellow at the Centre for Research in New Music at the University of Huddersfield. He co-edited Noise In And As Music published by the University of Huddersfield press and co-organized an interdisciplinary symposium on the topic in 2013. Upcoming projects include and a Giga-Hertz Prize to produce a new work at the SWR Experimentalstudio and a Musical Research Residency at IRCAM.

Touching upon the history and aesthetics of 20th-century recorded media and digital information, and using 21st-century music information retrieval (MIR) as an analytical resource, I argue for curation as artistic process in examples drawn from recent electroacoustic music.

Over the last century, electronic culture has given increasing emphasis to curation as a creative act. Some of the most-used terms in recent media vocabulary suggest this shift, such as “DJ,” “remix,” “mash-up,” and “prosumer.” The visual arts and writing have embraced digital curation, including prominent figures like Christian Marclay, Ai Weiwei, Jonathan Lethem, and Kenneth Goldsmith. In *Uncreative Writing* Goldsmith critiques recent poetry for its resistance to these new sites of invention: “From the looks of it, most writing proceeds as if the Internet had never happened.”ⁱ However the same could be said of much music, even electroacoustic music.

One explanation is technological: while search engines have made unprecedented

quantities of digital text immediately accessible, the transition of sound from analog to digital was at first not accompanied by a similar revolution in searchability. Audio can be searched through textual metadata, an especially powerful tool when connected with the Internet, but only more recently have MIR techniques emerged for searching sound itself.

Since the late 1990s, the growing field of MIR has explored the uses of audio feature extraction to summarize information about digital sound.ⁱⁱ An audio feature, or descriptor, is any characteristic attributed to audio such as pitch, loudness, brilliance, or higher-level metadata. MIR is changing the way music is categorized, marketed, and recommended through companies like Pandora and The Echo Nest. It also has applications for creation.

A recent generation of electroacoustic artists have embraced MIR to curate large databases of audio recording, going far beyond traditional sampling techniques.

They include composers and improvisers Johannes Kreidler, Maximilian Marcoll, Matthew Schlomowitz, Alec Hall, Bryan Jacobs, William Brent, Ben Hackbarth, and Diemo Schwarz, many of whom program their own computer tools as an extension of the curatorial process for gathering and filtering material. For example in Kreidler's work *product placements* 70,200 sources are sampled in a 33-second electroacoustic piece, the impact of the work goes beyond a concert realization: as Kreidler writes, "the work is a network."ⁱⁱⁱ

In my own work *Without Words* for soprano, ensemble, and electronics, databases of texts, field recording, vocal, and instrumental samples are combined using MIR techniques into multilayered audio mosaics, each of the sources activating a different time and place in the work's genesis.

These examples challenge the concert work as a unique site of creativity: instead, archive-like totalities and multiple temporalities become equally important in a distributed process involving many creative voices in dialogue. Traditional concepts of originality are replaced by "unoriginal genius," to borrow a phrase from writer Marjorie Perloff.^{iv} Or as Marcoll, states "the music of today demands new imaginations of sounds everybody knows."^v Even with music bathed in samples, databases, references, and borrowings, the contrasting musical results the artists derive attest to the individuality of these curatorial approaches.

ⁱ Kenneth Goldsmith, *Uncreative Writing* (New York: Columbia University Press, 2011), 6.

ⁱⁱ Michael Fingerhut, "Music Information Retrieval, or how to search for (and maybe find) music and do away with incipits," *IAML-IASA Congress*, Oslo, 2004, accessed 6 May 2013, <http://articles.ircam.fr/textes/Fingerhut04b/>.

ⁱⁱⁱ "Das Werk ist ein Netzwerk." Thomas Groetz, "'Kunst muss verdächtig sein': Der Komponist und Aktionskünstler Johannes Kreidler," *MusicTexte* 123, 2009.

^{iv} Marjorie Perloff, *Unoriginal Genius: Poetry by Other Means in the New Century* (Chicago: University of Chicago Press, 2010).

^v Michael Rebhahn, "No problem! Approaches towards an artistic New Music" (paper presented at Harvard University, Cambridge, Massachusetts, April 13th, 2013), accessed April 1, 2014: <http://hgnm.org/wordpress/wp-content/uploads/2013/05/Rebhahn-Lecture-Harvard.pdf>.

The electroacoustic performance/installation and its audience

Michael T. Bullock
University of Massachusetts, Boston

Mike Bullock a composer, media artist, and porcelainist with over a decade of international activity. His work encompasses electroacoustic improvisation, installation, live video, contrabass, and synthesizer. Bullock performs across the US and in Europe, collaborating with a huge range of artists including Bertrand Gauguier, Andy Guhl, and Mazen Kerbaj, Pauline Oliveros, Bhob Rainey, Steve Roden, Keith Rowe, and Christian Wolff.

Bullock's music has been released by numerous labels including Sedimental, Intransitive, Important, Winds Measure, Sedimental, Grob, 1.8sec, al Maslakh, and Homophoni. He holds a PhD from the Arts Department at Rensselaer Polytechnic Institute in Troy, NY, and has taught and lectured in the US and Europe on field recording and improvisation. With Linda Aubry Bullock he is the co-founder of the art-edition label Shadowselves.

This paper will investigate a particular variety of sound art that involves electroacoustic sound created live *in situ* with a visual or multimedia environment. These works, presented as exhibits at galleries rather than performances in concert halls, exist at the hazy overlap of electroacoustic music, improvised music, sound art and visual arts. In these pieces, very often the sound component of the piece is centralized, even foregrounded, within an environment of plastic art and film or video. Examples include John Cage and David Tudor's *Rainforest IV*; the long-duration work of the Cork, Ireland group Strange Attractor; California artist Steve Roden's *Shells, Bells, Steps, and Silences*; the stripped-speaker constructions of Boston instrument builder and cellist Vic Rawlings; and my own *Speaking/Drawing* series, in which stripped speakers are used to generate visual art.

In his seminal collection *Sound Works*, Max Neuhaus reminds us that art, and music especially, can be burdened by the perceived obligation to entertain. Neuhaus himself was

attempting to shrug off that burden by changing his career path, from a high profile performer of contemporary percussion music to an installation artist whose primary material was sound.

Performance installations tend to share a number of characteristics that set them apart from traditional electro-acoustic presentation and bring them closer to the worlds of multimedia installation and live self-idiomatic improvised music. These characteristics include non-virtualized acoustic environments; very long or indeterminate durations; and a third kind of encounter with the audience – not witnessing performers framed by the proscenium, yet nonetheless in the performer's presence, even if unwittingly. These works are not participatory; nor are they strictly separated from their audience. This raises the stakes for both the audience and the artist, actively interrogating their normative relationships.

How does the reception of such works differ from either “pure” performance or “pure” installation? Can it be said that traditional

electroacoustic diffusion has more in common with this sort of installation than it does with other typical forms of concert music presentation? Electroacoustic compositions may be diffused in concert by a performer sitting at a mixing desk behind the audience, rather than on stage. Similarly, in performance/installation, the performer is usually embedded or even hidden in the environment of the piece, rather than centralized on stage.

On the other hand these performance/installations often use diffusion technologies at odds with the electroacoustic tradition of transparency, wide frequency response, and a virtualized listening environment. Performance/installations may use radically altered loudspeakers – as in *Rainforest IV* – or even speakers stripped bare of their enclosures. Are the speakers themselves more of an entity than what

comes out of them - in other words, are they materialized beyond the music's ability to keep up? Or, by their inherent sonic limitations, do they frame the mediated space of music in a way that typical "high fidelity" presentations attempt to mask?

By investigating these questions I intend for this paper to shed light on an undercurrent of sound art that shows a debt both to live improvisation and to electroacoustic diffusion. At the same time it may raise further issues about the reception of art, and the viewer/listeners tenuous position between gallery visitor and concertgoer.

Bringing Forth a World Sound Installation as a Process of Cognition

Teresa Marie Connors
The University of Waikato
New Zealand
divatproductions@gmail.com

Teresa is active in many aspects of music practice being an acoustic/electroacoustic composer, opera singer, film scorer, and multimedia installation artist. She collaborates with many artists from diverse backgrounds and with different sensibilities. Originally from the musically rich island of Newfoundland Canada, Teresa holds a Master of Music degree in composition (1st class honours) from Waikato University in New Zealand and studied both composition and opera singing at Dalhousie University in Nova Scotia as well as the Banff Center for the Arts. Her creative works have received awards and support from the Canada Council for the Arts, British Columbia Arts Council, Bravo Fact and has been presented at international conferences, film festivals, and galleries. Her current PhD research at Waikato includes developing new methodologies and techniques for multimedia collaborations. www.divatproductions.com

My practice as a composer has become increasingly collaborative. The majority of my projects are concerned with exploring new relationships from an ecological¹ perspective, which often results in audiovisual installations. In an attempt to contextualize my practice I have become interested in the Humberto Maturana's and Francisco Varela's Santiago Theory of Cognition. This theory resonates with me as a means to engage with ontological consideration of interconnectedness.

Historically, the Santiago Theory of Cognition evolved from the scientific research that took place over the last decade. This research reflected a paradigmatic shift away from a mechanistic, representational model, to one of an interrelated, performative network[1] and includes: emergent properties, systems thinking,

cybernetics, complex systems, chaos theory, autopoietic networks, Gaia theory, and biosphere consciousness.

With the Santiago Theory of Cognition, Maturana and Varela suggest that all living systems are driven by cognition and consciousness that we "continually bring forth with others." [2] This places human activity into the larger environmental context by intersecting with forces greater than those of human design, providing a point of creative enquiry in which the total is greater than the sum of the parts.

By contextualizing my research within the Santiago Theory of Cognition, this paper presents a creative practice that engages with ontological considerations of interconnectedness. It investigates the interrelationships between complex systems as process and structure and their artistic potential for an empathic² discourse by

¹ The term ecological refers to the philosophical school of thought which believed the world to be a network of interconnected and interdependent phenomena. The Norwegian philosopher Arne Naess coin the term "Deep Ecology" to reflect this viewpoint and stated that the essence of deep ecology is to ask deeper questions.

² Jeremy Rifkin suggests that empathy is the "invisible hand" that allows us to stretch our sensibility to all life. He proposes that more technologically advanced cultures have evolved into that of *homo empathicus*,

extending our identity to include the larger biosphere.

Accordingly, multimedia sound installations offer an experience which embraces the notion that “cognition involves the entire process of life – including perception, emotion, and behaviour.”[1] As the installation platform eliminates the constraints of beginnings, middles, and ends, a space is created where contemplation can play a creative role in the process of consciousness. The implication is that the artefact experienced is an autopoietic system in that what emerges results from the interactivity of all components. I suggest that this positions multimedia sound installation within ontological theatre: “a vision of the world as a place of continuing interlinking performances.”[3]

What this model offers is a method to promote critical discourse beyond pure aesthetic choices into observations of interconnectedness with the larger biosphere, suggesting new creative relationships and the reimagination of interrelatedness [4]. This works towards an artistic philosophy that considers “how we imagine the world and how we act in it reciprocally inform one another.”[3]

Selective bibliography:

1. Capra, Fritjof. 1996. *The Web of Life*. New York: Doubleday.

2. Maturana, H and F. Varela, *Autopoiesis and Cognition: the Realization of the Living*, Dordrecht: D. Reidel Publishing, 1980

3. Pickering, Andrew. 2010. *The Cybernetic Brain*. Chicago: The University of Chicago Press.

4. Salter, Chris. 2010. *Entangled: Technology and the Transformation of Performance*. Cambridge, MA: MIT Press.

which is ushering in a biosphere consciousness. This evolution has occurred due to the diversity of human interaction, creating a more complex system of communication and emergence.

<https://www.youtube.com/watch?v=l7AWnfFRc7g>

Into-Place-Sound: Sound Installation Art

Ian Stevenson

School of Humanities and Communication Arts
University of Western Sydney, Australia

Ian Stevenson is a specialist in the field of audible design with over twenty years of experience as an audio engineer, producer, artist and educator. He has worked in the theatre on West-end and touring productions in Europe and Australia, in live sound production and recording for contemporary classical and popular concert music, and in post-production. He is currently lecturer in sound technologies in the School of Humanities and Communication Arts at the University of Western Sydney.

In this paper I consider aspects of sound installation art under the conceptual sign of *installed sound*. These two terms suggest a fruitful problematic. The Oxford English dictionary provides an etymological origin for the term *installed* in the medieval Latin *installare*, meaning into-place. The term *sound* defined tautologically by Aristotle as the proper object of audition offers a semantic richness equal to that of *place* (Cresswell, 2004). As Pierre Schaeffer suggested, sound as a construct emerges along the series of the concrete and the abstract, and the subjective and the objective. Place shares this structure.

In her 2001 survey of Australian sound art, Ros Bandt divides spatial sound works in to "spatial sound design and spatial music" on the one hand and "place as acoustic space" on the other. This division is mirrored by Georg Klein (2009) who proposes the categories spatial sound works (*raumklang*) and site-sound work (*ortsklang*). These divisions suggest the conceptual series of space and place, relying on a weighting of the abstract and the concrete at various points on the series. In these analyses, spatial sound works deal with an abstract notion of space employed as a compositional variable, while site-sound works deal with the geo-political concrete realities of place. Any such polarised division must not ignore the complementary nature of the terms of the series. Any abstract spatial sound work must deal with the concrete production of sound material and the limitations and potential of venues, and devices in their concrete context. Similarly, the abstract meanings associated with the lived experience of places and their

representations are what define the materiality of the site-sound work.

An alternative critique of installed sound is perhaps needed. Whereas the term electroacoustic music suggests a discourse that prioritises the *how* and *what* of the art-form, in contrast, Bandt has developed a creative practice that demands a focus on the *when* and *where* that inform the human relationships upon which the subordinate what, why and how must depend. Such a concern for the human values from which a sound art emerge echo the vision/audition of Pierre Schaeffer. Bandt's conception of place imagines sound as a relational field through which time and place are expressed. In this view, the when, where and who of place are factors on which sound's formal and material production must be contingent.

This radical reappraisal of installed sound problematises the gallery as a site for sound work and I consider an approach to this problem as the creative impetus for new works.

Selective bibliography:

Bandt, Ros. (2001). *Sound Sculpture*. Sydney: Fine Art Publishing.

Chion, Michel. (1983/2009). *Guide To Sound Objects. Pierre Schaeffer and Musical Research* Retrieved from <http://www.ears.dmu.ac.uk>

Cresswell, Tim. (2004). *Place : a short introduction*. Malden, MA: Blackwell.

Klein, Georg. (2009). Site-Sounds: On strategies of sound art in public space. *Organised Sound*, 14(01), 101-108.

Hugh Davies's Electronic Music Documentation 1961–8

Dr James Mooney
University of Leeds, UK

Dr James Mooney is a lecturer in Music Technology at the University of Leeds. He has previously held positions of visiting Research Associate at The Science Museum, London, Edison Research Fellow at the British Library, and visiting researcher at the Stockhausen Foundation in Germany. In the early 2000s he designed sound-diffusion systems for electroacoustic music performance, which are still used in the UK and abroad, and have influenced the development of subsequent systems. His recent research—which has been funded by the British Library, British Academy, and Leverhulme Trust—has focussed upon work of the English musician and musicologist Hugh Davies (1943–2005) in the domain of electronic music. His current project explores Davies's electronic music research from 1961–8, culminating in the publication of the monumental *International Electronic Music Catalog*.

I will provide an account of certain key aspects of Hugh Davies's electronic music research and documentation in the 1960s. By presenting evidence from a range of Davies's published (see 'selective bibliography') and unpublished writings I aim to show how Davies sought to document the development of the electronic music phenomenon up to 1967. In his writings from this period, Davies commented upon the fragmented nature of the electronic idiom, as evidenced—for example—in multiple parallel nomenclatures (*elektronische Musik*, *musique concrète*, Cage's 'Music for Tape-Recorder' group, Varèse's 'organised sound,' etc.). 'This proliferation of different names for what is basically the same kind of music,' he wrote in 1963, 'shows that a considerable number of composers in different countries are all trying to find a workable idiom.' [1] I aim to provide an account of some of the ways that Davies described the idiom's maturation as an international, interdisciplinary praxis, conveying—perhaps for the first time—a sense of the various international, aesthetic, and disciplinary threads coalescing into an apparently coherent whole, a process driven by the exchange of ideas across international and disciplinary boundaries.

Even in his earliest unpublished writings on the subject (dating from 1961), Davies drew attention to the presence of 'a large group of international composers' at the WDR studio in Cologne, and also indicated the existence of studios in various different countries throughout the world. Davies's tendency to classify by

nation was not merely an organisational device, since he went on to emphasise the role of internationalisation as a potent source of musical innovation, both in the fledgling idiom of electronic music in particular and in avant-garde music more generally. Specifically, he pointed to the developmental avenues opened up via the hybridisation of already-developed international musical traditions—a phenomenon that he contrasted with the 'on-the-spot' invention of new musical forms, syntaxes, etc., which he referred to as 'parlour games.' He also drew attention to the exchange of ideas mediated by visits to electronic music studios by composers with different international and disciplinary backgrounds, and to the catalytic effect this had on the development and maturation of the electronic idiom in the late 1950s and early 60s. He sought to convey a sense of the interdisciplinary nature of electronic music by drawing parallels with the techniques of painting, sculpture and other musical traditions such as jazz in his earlier writings, and via the provision of several appendices in his *International Electronic Music Catalog* [4], each of which focussed on the use of electronic music techniques in a different interdisciplinary area.

All the while, Davies was working toward the production of a comprehensive inventory of electronic music, beginning in earnest with his 'Discography,' [2][3] which listed recordings available commercially on records or for hire on magnetic tape. This endeavour reached its pinnacle with the publication of the *Catalog* in 1968, which Davies estimated (quite accurately,

as far as anybody can tell) accounted for ‘probably about 90% of all electronic music ever composed’ [unpublished promotional materials dated 1967].

The *Catalog* remains, to this day, the most complete record of international electronic music activity up to the end of 1967. A broader aim of this research is to work towards an evaluation of the implications of this, historiographically speaking. To what extent, and with what consequences, do subsequent published histories of electronic music rely upon data provided in the *Catalog*, for instance? In what ways might Davies’s model of electronic music as an international, interdisciplinary praxis be criticised, and what might be the implications of such criticism for the field of electroacoustic music studies?

Selective bibliography:

- [1] Davies, Hugh, ‘New Directions in Music’, *The New University*, 12 (1963), 8–17.
- [2] Davies, Hugh, ‘A Discography of Electronic Music and Musique Concrète’, *Recorded Sound: The Journal of the British Institute of Recorded Sound*, 14 (1964), 205–24.
- [3] Davies, Hugh, ‘A Discography of Electronic Music and Musique Concrète: Supplement’, *Recorded Sound: The Journal of the British Institute of Recorded Sound*, 22-23 (1966), 69–78.
- [4] Davies, Hugh, *Répertoire International Des Musiques Electroacoustiques / International Electronic Music Catalog* (Paris & Trumansburg, NY: Groupe de Recherches Musicales de l’ORTF & Independent Electronic Music Center, Inc., 1968).

The stance of German “New Simplicity” composers on sound art

Viviane Waschbüsch
Université Paris-Sorbonne

Viviane Waschbüsch (b. 1989) is a graduate of the Paris-Sorbonne University and the Saarland University, where she received both her Maîtrise and Master's degrees in Music and Musicology. She studied with Wolfgang Rihm at the Musikhochschule Karlsruhe and received a Master degree in composition with violin as principal instrument. She is laureate of the 2008 “Jugend Komponiert” in Germany as well as of the 2005 Alois Kottmann International Prize for Violin in Frankfurt. Since 2011 she worked as a lecturer at the Department of Musicology at the University of Saarland where she taught history of composition, analysis of tonal music and analysis of contemporary music. Since 2013, she studies with Prof. Marc Battier to accomplish her PhD at the Paris-Sorbonne University. At Paris-Sorbonne University she has a doctoral contract and teaches analysis and ear training.

For composers of the “new simplicity” movement including Wolfgang Rihm, Hans-Jürgen von Bose and Detlev Müller-Siemens, sound art has always been a difficult subject. In the early 1970's while searching for an alternative musical language to serialism, they planned a return to the romantic ideals of chamber music, symphonic music and opera. This approach seemed antithetical to the concept of electroacoustic creation; however, if we look at the first manifesto of the “new simplicity” movement from 1974 we discover that the original members Hans-Jürgen von Bose, Wolfgang Rihm and Detlev Müller-Siemens were in fact very interested in the development of electroacoustic creation – but found the evolution of the synthesizers and new sound tools to be too slow. While others continued to research new concepts and sound, they decided to take a more conservative approach. Thus, in the mid-1970s they refrained from using electroacoustic elements in their works and did not compose any sound art installations.

Of the three composers, Wolfgang Rihm ought to have been the most interested in electroacoustic areas, as he studied with Karlheinz Stockhausen. But, according to a recent biography by Eleonore Büning in 2012, the young composer was not much interested in the advice of Karlheinz Stockhausen. Wolfgang Rihm spoke openly about his difficult relationship with Stockhausen:

„Mich hielt er sowieso für ein verlorenes Schaf. So gerne, wie ich dabei war damals, so hatte ich doch immer das Gefühl, dass er mich nachsichtig betrachtet hat, mitleidig fast, als denke er: „Bei dem ist ja Hopfen und Malz verloren, da kann ich reden, was ich will, der macht, was er will.“¹

Stockhausen reacted in a manner of “capitulation” toward young Wolfgang Rihm, even as Rihm was not mature enough to understand his teacher's concepts. But while Stockhausen's direct influence on Rihm is almost imperceptible,

¹ BÜNING, Eleonore, „Über die Linie. Wolfgang Rihm, ein deutscher Komponist“, Zsolnay Verlag, Wien, 2012. „He thought of me as if I was a lost sheep. As much as I enjoyed being part of the composition class, I had always the impression that Stockhausen had a pitying look on me as if he was thinking: that guy is beyond hope. I can teach whatever I want; he always does what he wants.” (personal translation).

the result of their musical conflict – and Rihm striving to break away- brought forth an interesting new aesthetic. If this paper seems to focus on the work of Wolfgang Rihm – though he composed less for electroacoustic elements than Hans-Jürgen von Bose - the reason stems from the controversy he started in an interview when he called the creators of sound art “garden gnomes of music”. Neither Hans-Jürgen von Bose nor Detlev Müller-Siemens ever made any public comments on their position towards sound art. Rihm’s statement on electroacoustic music is the only one from a composer of the “new simplicity” generation.

This is why it is of major importance to look closer at the development of the use of electroacoustic music and sound art performances in the works of Rihm, von Bose, and Müller-Siemens. Rihm began using tape music for the choral parts of his operas and musicals at the end of the 1980s. Hans-Jürgen von Bose scored for cello, accordion, and electroacoustic in his 2012 musical “Nacht-Zeit-Mord” (written in Munich), replacing an ensemble that had strong interaction with the actors, singers and video-projection.

This presentation will follow the development of these three composers in the large field of electroacoustic music and explain how their aesthetic points of view changed and were transformed through the years into a more open-minded view on electroacoustic and sound art performances.

Selective bibliography:

HENTSCHEL, Frank, „Wie neu war die ‘neue Einfachheit’?“, in *Acta musicologica*, Basel, vol. 78, p. 111-131, 2006.

RIHM, Wolfgang, „Die einzige Kritik an der Kunst ist die Kunst“, in *Neue Musikzeitung*, n°9, p. 51, 2001.

RIHM, Wolfgang, „Der Autor trägt steht das volle Risiko; Bemerkungen zur Autorschaft in Kunst, Kultur und Staat“, in *Neue Musikzeitung*, n°10, p. 6, 1998.

“Atomic” Music: Navigating Experimental Electronica and Sound Art through Microsound

Sonya Hofer
New York
sonyahoferlanz@gmail.com

Sonya Hofer is a musicologist who completed a Ph.D. from Stony Brook University in New York. Her dissertation, “Experimental Electronica Beyond the Great Divide,” explores the interdisciplinary terrain of a significant metagenre of Electronic Music—Experimental Electronica—and focuses on how the repertoire eludes categorization by perplexing disciplinary lines. Hofer’s research examines the intersections and negotiations of, not only the varying fields of musical creation, such as those spanning the classical and the popular, but also, the varying fields of artistic creation, such as those between art and music. This Fall, she will join the music faculty at Colorado College as their Riley Scholar in Residence. In addition to being a university educator, Hofer has also worked as an art gallery curator and in various guises within Indie Rock.

In this paper, I examine microsound—an emergent term, corresponding concept, and associated genre of experimental electronica appearing in the late 1990s—which animates the idea of sound as material entity and, as I will demonstrate, ultimately complicates and expands questions concerning disciplinary boundaries.

The conceptualization of sound as matter, particularly on an imagined “atomic” level, has played a significant role in crystalizing certain experimental electronica genres. This impulse to ascribe mass to sound or to conceptualize it as a material object has had many historical antecedents, especially in the twentieth century. These range from Edgard Varèse’s seminal writings in “The Liberation of Sound,” notably in his advancement of compositional practice as the “organization of sound” that ultimately objectified a notion of sound (1962), to the very nature of *Musique Concrète*, as principally described in Pierre Schaeffer’s tome, *Traité des Objets Musicaux* (1966), to György Ligeti’s compositional practice and aesthetic of sound masses in such works as *Atmosphères* (1961). Music understood as a physical entity extends into the technological sphere, encompassing the advent and use of various technologies that visually represent sound and the sound spectrum. Such tools include spectrographs, Iannis Xenakis’s UPIC

system (1977), software that enable granular synthesis, and other programs offering pictorial models of sound in object form, such as MAX/MSP and even Pro Tools. However, the comparison, representation, and analogy of sound as an object of material composition is a peculiar metaphor, as sound is not literally tangible nor does it have any inherent material substance in and of itself.

At the meeting point of microsound, a wide spectrum of musicians and listeners across genres and subgenres has converged, along with a diverse range of technologies and approaches to them. In what follows, I begin by tracing the emergence of microsound, focusing on its inherent perception as musical “matter.” Microsound conceptually had the ability to draw in a variety of aesthetic connections with, and in some senses subsume, several experimental electronica genres and subgenres (such as glitch, microhouse, minimal), all of which impacted and became part of its very notion. Microsound has figured into the evolution of these genres as it evolves, cumulating in a broader picture of experimental electronica during the first decades of the 2000s.

Enmeshed with a powerful technoscientific idea of sound on an “atomic” level that helped to conceive sound in a more tactile manner, microsound consequently also gathered in and associated genres beyond

musical ones and in the realm of the visual and plastic arts, from minimalism/Minimalism to overlappings with sound art. As will be seen, this exploration of the inception and implications of microsound will offer one instructive path that helps elucidate the convoluted relationship between experimental electronica and sound art. By examining a few key works in microsound by Richard Chartier, I demonstrate how the repertory

allows creators to work across such disciplinary lines but also how, in doing so, microsound sometimes draws attention to their distinctions. And yet, while greatly perplexing these lines, microsound ultimately helps to clarify vagaries by offering some direction from within the murky ontological terrain by articulating specific points of connection, commonality, and divergence between these intertwined fields of creation.

Gesture analysis and rhetoric. Hyper-cello as an algorithmic composer.

Nicola Baroni / Carlo Benzi
Musikkonservatorium Bozen (Italy)

Nicola Baroni gained degrees in Cello, Electronic Composition, and Musical Aesthetics at the University of Bologna. After performance-specialization with Franco Rossi and Siegfried Palm, he has followed stages on Live Electronics at IRCAM.

Cello teacher at the Conservatory of Bozen, he is developing a PHD on the Hyper-cello at the University of Edinburgh. Cello soloist and Live Electronics performer, he collaborates with the chamber and contemporary ensembles Octandre, Icarus, Cardew, and worked with the composers Malec, Bussotti, Donatoni, Castaldi, Casserley, Guarnieri (label-discography: Tactus, Bongiovanni, Discantica). He gave lectures on Improvisation and Technologies in different universities in Europe and America.

Carlo Benzi gained degrees in Piano, Composition, Electronic Composition at the Conservatory of Genua and Milano, in Philosophy at the University of Genua and in Musicology (PhD) at the Universities of Trento and Paris IV Sorbonne. He attended composition courses with Franco Donatoni, Tristan Murail, Magnus Lindberg, Philippe Manoury, Karlheinz Stockhausen. Teacher at the Conservatory of Bozen for Harmony and Music and New Technologies, he is member of some improvisation ensembles (AntiSonic, Cardew, thecomfortzone). As composer he is particularly interested in the interaction between instruments and live electronics, as musicologist in the relationship between rhetoric and music (in the baroque and the contemporary era). He gave lectures on Improvisation and Technologies in different universities in Europe (Hannover, Vienna, Göteborg).

The gesture, intended as an action producing sounds, has played an important role ever since the advent of electronic music (Wanderley and Battier 2000): Schaeffer's *objet sonore* is produced by recording a gesture, the improvisations of *Musica Elettronica Viva* are characterized by gestures of the performers on acoustic and electronic instruments, a masterpiece like *Kontakte* by K. Stockhausen is based on different gestures in the score of the piano and the percussion and on the magnetic tape. These pieces are characterized by a strong formal tension, which Dalmonte called "gesture of the form".

The gesture forms a continuum not only between improvisations and precisely noted compositions, but also between pieces exclusively based on music and more complex works that include video and other media. In this way contemporary art is able to repropose in a new language the interaction between man, nature and machines characteristic of the baroque theater as well as the continuum between

improvisation and composition of baroque music based on the *Basso Continuo*.

Since the 1960s interaction with machines has allowed composers and performers to expand musical gestures over a wide range of possibilities: live electronics can reinforce the gesture of the performer or, to the surprise of the listeners, contrast it and also their expectations. Why are composers and performers still today amplifying gestures, as in baroque theater?

Rhetoric, intended as the art of shaping communication, provides us with a possible answer: they did this, and continue to do so, in order to create continuity between the intentions of the composer, the performer and the listener/spectator. If the listener/spectator understands the gestures of an artwork and their transformations, then its interpretation is no longer absolutely free, but is constrained within limits (Eco 1990). Surprise, a baroque ideal intended as a deviation from what the listener is expecting to hear/see, is now involved in the

conception of the form of the piece: if the listener is able to recognize it, it is still possible to speak of a communication between the composer, the performer and the listener.

In this context we aim to propose a methodology that develops the concept of the Hyper-instrument (Machover 1992) in order to analyze live performance gestures through current technologies in terms of body interaction, and, at a deeper level, under the guidance of their audio-spectral description.

The Baroque ideal of man and culture as creative machines is here extended towards the conception of a "formal gesture" and its surprising resonances.

We start from the assumption that the "sound object" is a form-bearing entity (Godoy 2006) not detachable from the performer's body and from the instrument producing it. Our real-time technology collects data describing the qualities of the musical gestures, taken as a ground for generative algorithmic compositional strategies. Software, data body and musical hermeneutics are thus intended as a main bridge between the physical dimension of the timbre and its structuring potential.

In this way the Hyper-cello generates software musical symbolisms evolving in a complex, but still deterministic fashion, positing a continuum between score and instrument. The formal cohesion of the work is creatively shaped by the performer's data and by the dynamic interplay with complex mappings, statistical algorithmic modules, and self-organizing abstract strategies. This concept takes its inspiration from Eigenfeldt's research involving compositional agencies operating as

performance interactive ecosystems (Eigenfeldt 2011).

The interactive system we propose is built on Max/MSP and developed with the audio descriptors by Miller Puckette, Tristan Jehan, and the IMTR-IRCAM libraries of sound and gesture analysis, combined with the inertial motion tracking system from the Speckled Computing of the University of Edinburgh (<http://www.specknet.org/>).

Selective bibliography:

Eco U. (1990), *I limiti dell'interpretazione*, Bompiani, Milano.

Eigenfeldt A. (2011), "Real-time Composition as Performance Ecosystem", *Organised Sound* 16(2), Cambridge University Press, p. 145–153.

Godoy R.I. (2006), "Gestural-sonorous objects: embodied extensions of Schaeffer's conceptual apparatus", *Organised Sound*, Vol 11 (2), p. 149-157.

Machover T. (1992), *Hyperinstruments. A progress report 1987-1991*, MIT Media Laboratory, Boston.
<http://opera.media.mit.edu/publications/>
(Accessed 3/1/14).

Wanderley M. and Battier M. (2000), *Trends in Gestural Control of Music*, IrCam, Paris.

(Re-)Contextualizing Meaning with Physical and Sonic Objects in the work of Hanna Hartman

Dr. Heather FRASCH

Heather Frasch is an American composer of acoustic and electronic music, improviser, experimental flutist and sound installation artist. She is a recent PhD graduate of University of California, Berkeley where she studied composition with Franck Bedrossian, interactive electronics and new media with David Wessel, and improvisation with Myra Melford. She also holds a Bachelors of Music from Temple University in Philadelphia, PA and a diploma of composition for the National Conservatory of Lyon, France. Her music has been performed at festivals and concerts worldwide, such as: FRUM (Iceland), Atlas Academy (Holland), ICMC (Huddersfield), NYCEMF (New York), SICMF (Korea), Moscow Autumn Festival, San Francisco Tape Music Festival (CA), Acanthes Festival (France), and the Third Practice Music Festival (Virginia), among others. Honors include the George Ladd Prix de Paris in Composition (2008), the International Slonimsky Competition Composition Prize (2012), and the Nicol DeLorenzo Prize in Composition (2010 & 2008).

With the incorporation of electronics and (pre-)recorded sound technologies into the musical performance situation, the sonic space expanded. A vast palette of timbral and sonic possibilities emerged. Ears were amplified and extended. It also brought new instruments and objects onto the stage, most notably that of black boxes, also known as loudspeakers. Concerts of boxes instead of humans, filled our ears with complex sounds. Objects, who disembodied sounds from their sources, focused the listening while removing visual references. The hiding of sound sources started to bring about questions that needed to be answered. Artists asked themselves: what does it mean to remove objects from the stage, to leave it behind, or to bring it back. Visual neutrality could no longer be taken for granted. The presence of a live source, either instrument or performer, had more weight than it did before.

And the answers have been diverse. Instruments have been built to enhance physical gesture and motion with electronics and sensors. Sonically rich and resonant objects have been hung around spaces to replace traditional loudspeaker membranes. Some artists create kinetic sculptures whose sonic properties create their own performance situation. There are even new musical instruments that involve animals and plants in the bio-feedback domain.

Furthermore, artists play with blurring the lines of control, production, and creating variations on how these technobodies are related. And, of course, many artists are still committed to the black box, and isolating and amplifying the ears with the complete removal of the visual.

Electronic composer and sound artist, Hanna Hartman, has found a personal solution, that foregrounds the object, extracts its sonic properties, and creates artistic meaning with its presence on the stage. Her work connects and balances all of these elements. Her starting point as a composer, was ‘sound for sound’ sake, focusing on the purity of sounds and then recontextualizing and revealing hidden correspondences between sounds. But her work has branched out, incorporating instrumentalists and acoustic objects. The objects she works with are sonically rich, as well as hold strong metaphorical, yet non-explicit imagery. Their presence is poetical. Their meaning is not forced or directed. It can hold one interpretation for one person, and another for someone else. But still the objects Hartman chooses have a strong visual presence which amplify their presence alongside that of the sound.

In this paper, I will draw upon Marshall McLuhan’s and Gilbert Simondon’s notions of technology in order to analyze how, with the advent of electronic music, the presence of new technologies brings into question and creates new relationships with the old. As

Hartman's work combines both object, technology and performer, it can shed an interesting light on how these theories are relevant in current electronic musical practices. Traditional musical instruments are re-experienced, re-seen, with co-collaborators of electronic objects. Hartman's works do not disembody or reembody sounds, but rather reembody the traditional acoustic instruments

with the presence of her new objects. The sparseness and clarity of material allow for the richness to be felt and heard, in all the collaborators: instrument, object, performer & sound. Hartman's work is a balance that allows the new instruments to deepen the meaning of the composition, and change the presence of traditional instruments.

Four Small LLEAPPs for Electroacoustic Music Studies: Notes on performance strategies from a series of participatory electronic music workshops

Owen Green

Edinburgh College of Art, University of Edinburgh, UK

Owen Green (owen.green@ed.ac.uk) is a composer-improviser with a focus on the interaction of electronic and physical materials. He was awarded his PhD by City University London in 2013 for research on electronic improvising practice and currently teaches sound design and electroacoustic composition to undergraduate and postgraduate students at the University of Edinburgh as well as assisting research on a project investigating design pedagogy. His current research interests are concentrated on the socialities of electronic musicking, and the ways in which practice informs our sense of the world. Owen is a co-founder of LLEAPP, a recurring practice-led symposium for researchers in electronic music.

This paper will consider the conference theme of 'Electroacoustic Music Beyond Concert Performance' through the lens of a UK-based participatory electronic workshop for postgraduates and early career researchers that I have been involved in organising since 2009. These events go under the banner of 'LLEAPP'¹ and have been held four times in total with participants from a range of UK and European universities: twice at the University of Edinburgh (2009, 2013), the University of Newcastle (2010) and the University of East Anglia (2011). Whilst the format has tended to shift slightly from event to event, in each case the focus has been on participants coming together and devising some performable music over the course of two or three days, as a basis for reflective practice-led research.

What shifted more significantly between episodes of LLEAPP were the approaches taken towards coping with and situating the performance outcomes. My focus will be on comparing these various approaches and their relationship to the notion of the capital-C Concert. Most conspicuous in this respect

are the ways in which the two most recent LLEAPPs each engaged with the challenges of reconciling the pressures of public performance with the workshop's focus on self-organised, participatory musicking. At the 2011 event, two performances of ostensibly the same material were given on successive nights in different settings: a more formal affair in the university's concert hall and something more relaxed at a local venue. In 2013, the hitherto established practice of breakout groups working more or less independently towards a showcase performance was abandoned and replaced with all participants working together towards a collective presentation. This resulted in something quite distinct from the traditional concert in its uses of both space and time.

By analysing and comparing the details of what happened in these particular performances (and in their conception and preparation) a useful contribution can be made to considering the dynamics of live electroacoustic performance and its diverse. For example, these experiences provide a rich source because of their explicitly and deliberately contingent, negotiated nature. By bringing together diverse participants—with different backgrounds, preferences and

¹ There is cheerful fluidity about what the letters in LLEAPP stand for, but at the last discussion it was *Laboratory for Live Electronic Audio Performance Practice*.

ambitions—to make some kind of public presentation under severe time constraints, the kinds of negotiations and eventual compromises help us learn about the make-up and attitudes of our community. By looking at how the music that emerged was contingently engaged with the social and material circumstances of particular performance sites, we can perhaps develop a greater degree of reflective insight into the peculiarities of our musical rituals and a more shaded impression of the terrain of performative possibilities. In order to help develop an analytical approach that might aid in confronting and theorising these topics, I borrow from Georgina Born's (2010) recently proposed set of musical topics of *sociality*, *technology*, *temporality*

and *mediation*, and from Richard Shusterman's (2002) notion of the 'interpretative game'.

I conclude by drawing attention to one particular outcome of this theoretical development, which is to suggest that practice-led research in the field could usefully direct greater energy at the shadings between different electroacoustic performance practices, as an area of relatively untapped capacity. I argue this on two fronts. First, that we can contribute more richly to the interdisciplinary endeavour of musical research and, second, that we can improve our sense of communal, disciplinary identity as well as helping erode further the academic institutional boundary.

Universalizing the acousmatics: storytelling and culture-specific works

Panos Amelides

Music, Technology and Innovation Research Centre

De Montfort University

Panos.amelides@gmail.com

Panos Amelides is an acousmatic composer and researcher. His work focuses on the representation of political and cultural memory via means of recorded sound and the artistic possibilities the digital studio provides, in terms of digital storytelling, and sonic creativity. Panos is conducting a research towards a Ph.D. at the MTIRC, De Montfort University, UK. He holds a Master degree in Electroacoustic Composition from The University of Manchester and a Bachelor of Music from The Ionian University. His has presented in Europe, UK and USA. He plays piano, guitar and ney flute. For more information and for samples of work and publications, please visit: <http://panoamelides.wordpress.com/>

Mannerism and the use of aesthetic clichés in its language have isolated acousmatic music from a potential universal audience. The term acousmatic here is being seen from the perspective of acousmatic space-form (everything that can be recorded and played back). This paper proposes a new musical vernacular regarding acousmatic creativity based on culture-specific sonic and storytelling elements, related directly to the sentiment of the specific cultural group. Most acousmatic works seem to have inherited a particular style governed by the “unity of sentiment” as Rosen describes it (Rosen, 2010). On the other hand, according to Truax, cultural sonic elements might include soundmarks, keynote sounds, sound events and sound romances (Truax, 2001). Those elements combined with recorded speech can form a storytelling device, utilizing the inherited sounds and stories derived from a community. Taking as a case study a site-specific sound installation presented at a rural audience in Southern Greece, using as context vehicle Smalley’s ecological concept of acousmatic space-form (Smalley, 2007), Landy’s “something to hold on to factor” (Landy, 1994) and expanding the notion of Young, that the acousmatic medium has the unique capacity to function

as a mirror held up to lived experience (Young, 2009), this paper explores possibilities to universalise the acousmatic practice and expand its audience.

Selective bibliography:

Landy, L. 1994. ‘The something to hold on to factor’ in *Electroacoustic Timbral Composition*. In *Contemporary Music Review*. Vol. 10, No. 2. Chur: Harwood Academic Publishers: 49-60.

Smalley, Denis. 2007. Space-form and the acousmatic image. In *Organised Sound*, Vol. 12, No. 1. Cambridge: Cambridge University Press: 35-58.

Rosen, C. 2010. *Music and Sentiment*. USA: Yale University Press.

Truax, B. 2001. *Acoustic Communication*. Westport: Greenwood Publishing Group.

Young, J. 2009. Narrative, Rhetoric and Personal: Storytelling in Acousmatic music. Paper presented at the Electroacoustic Music Studies Conference, Buenos Aires.

Towards a Narratology of Acousmatic Music

James Andean

Centre for Music & Technology, Sibelius Academy, University of the Arts Helsinki

James Andean is a musician and sound artist. He is active as both a performer and a composer in a range of fields, including electroacoustic composition and performance, improvisation, sound installation, and sound recording. He is a founding member of improvisation and new music quartet Rank Ensemble and interdisciplinary improvisation ensemble The Tuesday Group, and one half of audiovisual performance art duo Plucié/DesAndes. He has performed throughout Europe and North America, and his works have been performed around the world. He is currently completing a doctorate in acousmatic composition at the Centre for Music & Technology of the Sibelius Academy, in Helsinki, Finland.

Acousmatic works tend to operate on two simultaneous planes: a more abstract, musical level of gesture, phrase, colour, texture, and motion; and a narrative level, which references real-world objects, actions, contexts and environments. Where instrumental music, broadly speaking, accesses this narrative level primarily through the use of metaphor, acousmatic music, while maintaining access to the more programmatic elements found in instrumental music, also has the capacity to enact experience much more directly, through the explicit use and application of real-world sound and motion. This ranges from the use of referential sound imagery, to a broader use of gesture and action enacted via acousmatic music's phenomenologically-grounded syntax.

Most theoretical approaches to the acousmatic genre tend to focus more on the structural and formal elements of the sonic plane, with minimal reference to more overtly narrative aspects. In the attempt to rectify this imbalance, the field of narratology suggests itself as a likely candidate for expanding our theoretical toolkit.

While narratology was initially focused more or less exclusively on literary narratives, the field has since branched out to a range of new media and intermedia narratives, including film, video games, and hypertext.

It could be argued, however, that this expansion has simply added a visual bias to the previous textual bias.

There is therefore much to be gained from a narratological approach to acousmatic music, in both directions. The narratological perspective calls attention to aspects of acousmatic music that have received too little theoretical attention. In exchange, acousmatic music offers an extremely relevant narratological case study, as the genre's strong narrative elements are entirely free of the textual and visual elements upon which so much existing narrative theory is based. Acousmatic music can therefore serve to differentiate core aspects of narratology that hold true across diverse media from those elements that are significantly diminished in relevance once both text and vision are left behind.

Narratology is particularly useful to the exploration of acousmatic narrative in offering models drawn from non-musical art forms, as it could be argued that most existing approaches to musical narrative are of dramatically reduced relevance to acousmatic music (with the exception, perhaps, of a common approach to formal considerations). We will thus be steering clear of more traditionally musicological perspectives on narrative, in favour of approaches to narrative across media.

Key theoretical touchstones include the field of cognitive narratology, championed by David Herman and Monika Fludernik, and Marie-Laure Ryan's work on narrative across media, as well as perspectives on acousmatic narrative from John Young, Trevor Wishart, Simon Emmerson, Denis Smalley, and Luc Ferrari. With regard to cognitive narratology, it is worth noting a tendency among theorists to move freely and indiscriminately between contrasting - indeed, often contradictory or incompatible - cognitive approaches. We will therefore follow Herman's lead in favouring the term 'sciences of mind', which more accurately reflects the tendency for narratology to reference a broad range of theory and research in constructing models of the mental construction of narrative.

The primary focus will be an examination of the extent to which several theoretical perspectives culled from current narratological theory are relevant when applied to acousmatic music. These include the apparent - though possibly illusory - absence of narrator in acousmatic music; the problem of causality; fiction vs. non-fiction in the acousmatic; mimesis vs. diegesis; the concept of 'spatial narrative'; narrative intention vs. narrative reception; and extra-

musical considerations. Finally, we can attempt to imagine an analytical scaffolding that incorporates narratological elements together with structural and morphological concerns to construct a more rounded approach to acousmatic analysis.

Selective bibliography:

Herman, D. 2002. *Story Logic: Problems and Possibilities of Narrative*. Lincoln: University of Nebraska Press.

Herman, D. 2013. *Storytelling and the Sciences of Mind*. Cambridge: MIT Press.

Ryan, M.-L. 2004. *Narrative Across Media: The Languages of Storytelling*. Lincoln: University of Nebraska Press.

Young, J. 1996. Imagining the Source: The Interplay of Realism and Abstraction in Electroacoustic Music. *Contemporary Music Review* 15(1–2): 73–93.

Young, J. 2007. Reflections on Sound Image Design in Electroacoustic Music. *Organised Sound* 12(1): 25–33.

From 'concert' to 'screening': visual anecdotes in Electroacoustic Music presentations

Diego Garro
Keele University (UK)

Diego Garro is a senior lecturer in Music Technology, Electroacoustic Music and Video Art at Keele University. He writes theoretical commentaries on aesthetics issues based on his practice-led research. His creative output includes fixed-media audio and audio-visual works, which are regularly selected and performed in UK and abroad and have often received international recognition in various festivals, conferences and competitions. These comprise prizes in two consecutive years at the Bourges International Competition of Electroacoustic Music and Sound Art in 2004 and 2005 and the 'Visionen' Preis at the 2012 Gemart Festival in Hannover.

In line with the spectro-morphological tradition of much of the electroacoustic repertoire, Visual Music works produced by artists of electroacoustic provenance are predominantly abstract, especially in terms of the featured imagery. Nonetheless, despite the ensuing non-representational idiom that typifies many Visual Music works, composers enjoy the riveting compositional opportunities offered by materials, both audio and video, which possess clear *mimetic* potential, intended here as the ability to imitate nature or refer to it, more or less faithfully and literally (Emmerson 1986).

In the age of ubiquitous digital media, composers still enjoy the process of 'capturing' events from the real world and use them, with various strategies, as building blocks for their work. Therefore, before making their way into the darkness of their computer-based audio and video editing laboratory, they still use microphones and video-cameras to harvest sounds, images, ideas, fragments, anecdotes which will then be thrown into the prolific cauldron of a compositional 'kitchen-studio'. There, a complex and often painstakingly long process of evaluation, manipulation and re-contextualisation can result in audio-visual mise-en-scènes that, despite the recognisable causal origin of the materials, can be wonderfully ambiguous. Drawing from my compositional endeavours in the audio-visual medium, I will posit that such radical departure from the points of origin emerges as a result of digital manipulation, as much as it

is a consequence of audio-visual montage. Mimetic discourse in the Electroacoustic works of Trevor Wishart, Luc Ferrari and Francis Dhomont encourages the listener to (re)create mental images from a complex web of personal and cultural references the music taps into. I call 'Mimetic Visual Music' the artistic practice of audio-video design in which a very similar process of reconstruction is encouraged, with the added facet that the data for such inference is now both aural and visible.

Mimetic Visual Music poses significant idiomatic challenges and fascinating creative opportunities for the audio-visual composers, both those with a background in Electroacoustic Music and those coming from visual arts and experimental cinema. The practices of Visual Music production often intersect those of Electroacoustic Music composition, while analysis of Mimetic Visual Music must inevitably be drawn from sources beyond the Schefferian methodologies and can easily cross-fade (!) into film theory. An audio-visual language disenthralled from the gravitational pull of narrativity, inevitably flirts with poetry and with its shifts from the *tale*, to more obscure meta-narratives. Reduced listening (Schaeffer 1966) and visual suspension (Hyde 2012) are important methodologies when coding and decoding the message in much Visual Music, but for the subset of repertoire presented in this paper a 'genetic' (related to the genesis of the work, Zattra 2005) interdisciplinary approach, from a composer's perspective, is more suited.

Mimetic Visual Music can be traced back as a further development of experimental cinema strands and can find its aesthetic and historical locus in the advancement of those experiences, developing its language, integrating strategies that are commonplace in Electroacoustic culture, and putting *sound* at the very core of its aesthetic and technical credo.

In this paper, the discussion will stem from my particular perspective of an audio-visual composer of acousmatic origin; hence, a brief excursus on the use of mimesis in the Electroacoustic Music, will lead to the exploration of a few important aspects of Visual Music composition. The paper discusses more (and less) probable links and parallels between Electroacoustic Audiovisual presentations and older aesthetic cousins forgotten, or never fully known, in the dusty, upper shelves of western cinematography. The question for the audience is whether a hybridisation between sonic and visual idioms is possible, and indeed desirable, and whether blurring the boundaries between ‘concert’ and

‘screening’ presentations can provide an opportunity to (re?)vitalise the Electroacoustic paradigms and rituals.

Selective bibliography:

Hyde, J. 2012. *Musique Concrète Thinking in Visual Music Practice: Audiovisual silence and noise, reduced listening and visual suspension*. In *Organised Sound*, Volume 17, Issue 02, August 2012, pp 170-178, Cambridge University Press.

Emmerson S. 1986. The relation of language to materials, in *The language of electroacoustic music*, London, MacMillan Press, pp. 17-39.

Schaeffer P. 1966. *Traité des objets musicaux. Essais interdisciplinaires*, Paris, Édition de Seuil.

Zattra, L. 2005. *Analysis and Analyses of Electroacoustic Music*. Proceeding of the Sound and Music Computing Conference, Salerno (Italy) 2005.

How Live is Real-Time?

Jack Nagle, Kerry Hagan,
Digital Media and Arts Research Centre
University of Limerick, Ireland

Jack Nagle is a composer and researcher working in real-time electroacoustic computer music, specifically interested in areas of indeterminate and stochastic processes along with chaos theory and other methods of audio synthesis. Utilising graphical programming environments such as Max/MSP and PD to implement his works, they are often realised real-time algorithmic pieces for stereo or surround sound.

Kerry Hagan is a composer and researcher working in both acoustic and computer media. She develops real-time methods for spatialization and stochastic algorithms, and studies the aesthetics and history of electronic music. She currently lectures at the University of Limerick in Music Technology, specialising in sound synthesis and electroacoustic and algorithmic composition.

This paper is predicated on the argument that real-time computer-generated music exists on a spectrum of “liveness.” First, we identify and compare terminology for live electronic, electroacoustic or computer-generated music. Several authors explored notions of liveness but remain inconsistent in their language and concepts. Secondly, we examine these authors’ writings to explore notions of liveness within real-time computer-generated music. Finally, we approach several musical examples that delineate the liveness spectrum.

Nomenclature in the domains of live and real-time music remains ambiguous. Authors use terms such as real-time, non-real-time, performative, compositional, speculative, algorithmic, generative, formalized, fixed medium and tape music to describe a complex intersection of ideas on liveness. For example, Agostini and Ghisi (2013) use “performative and speculative” to replace Puckette’s (2004) “performative and compositional” to identify real-time and non-real-time. But, this distinction almost necessarily implies live and not-live. Incidentally, we propose a new word, “notional,” to replace speculative and compositional in Agostini and Ghisi, and Puckette, respectively.

Collins (2003) discusses generative music and laptop performance. He makes a subtle contrast between real-time, generative music that does and does not include a live performer. In his definition, a performer could be playing an instrument or a laptop. However, Collins is willing to accept a mere button push as an act of performance. On the other hand, Garnett (2001) defines a narrow band of performance that requires at least one performer who is playing something other than the computer. Rowe (1999) falls between Garnett and Collins by situating real-time algorithmic composition as a potential part of live performance. Burns (2002) provides an interesting illustration of parallels between real-time and liveness in his real-time computer versions of both Lucier, a fixed-medium work, and Stockhausen, a live analogue electronics work.

Using more congruent language arising from the discussion of these authors’ terminology, we utilise works by Collins, Hagan, Lewis, Lucier, Rowe and Xenakis to circumscribe liveness in real-time computer music. For example, Lucier’s “I am Sitting in a Room” is canonically presented as a fixed-medium work. But, Burns’ real-time computer realisation responds to the live acoustic situation of each individual performance,

demonstrating the liveness of Lucier's idea regardless of its implementation. Xenakis (1992) proposed indeterminate music that could only be represented by several versions resulting from the compositional processes. However, his music is, perhaps even more so than Lucier's, instantiated by fixed-medium realisations. Hagan's indeterminate music is realised as Xenakis intended. As a result of real-time indeterminate processes, each iteration of Hagan's work is unique to each performance. However, this music does not require any human interaction, blurring its actual liveness. Lewis' and Rowe's interactive computer music, as well as Collins' laptop music, is often improvisational as well as real-time, which requires no justification to be labelled live. Through these examples, we find that, rather than there being a categorical distinction of liveness in real-time computer-generated music, there is a spectrum where different pieces illuminate subtle variations in liveness.

Selective bibliography

Agostini, Andrea and Ghisi, Daniele 2013, "Real-Time Computer-Aided Composition with *bach*," *Contemporary Music Review*, vol. 32, no. 1, pp. 41-48.

Burns, Christopher 2002, "Realizing Lucier and Stockhausen: Case Studies in the Performance Practice of Electroacoustic Music," *Journal of New Music Research*, vol. 31, no. 1, pp. 59-68.

Collins, Nick 2003, "Generative Music and Laptop Performance," *Contemporary Music Review*, vol. 22, no. 4, pp 67-79.

Garnett, Guy 2001, "The Aesthetics of Interactive Computer Music," *Computer Music Journal*, vol. 25, no. 1, pp. 21-33.

Puckette, Miller 2004. "A divide between 'compositional' and 'performative' aspects of Pd," *First International Pd Convention*, Graz, Austria.

Rowe, Robert 1999, "The Aesthetics of Interactive Music Systems," *Contemporary Music Review*, vol. 18, part 3, pp. 83-87.

Xenakis, Iannis 1992, *Formalized Music*, Stuyvesant, NY: Pendragon Press.

An Action-Oriented Sonic Experience: Taking multimodal and interactive electroacoustic music and sound art into account

Jin Hyun Kim
Humboldt University of Berlin
Institute for Musicology and Media Studies

Jin Hyun Kim is Junior Professor of Systematic Musicology at the Humboldt University of Berlin. She studied Music Theory at the Seoul National University (Korea) and Musicology and Philosophy at the University of Hamburg (Germany) and accomplished her PhD with a German doctoral thesis “Embodiment in interactive music and media performances: Taking perspectives from media theory and cognitive science into account.” She was Research Associate at the Collaborative Research Center “Media and Cultural Communication” at the University of Cologne (2002-2008), within the scope of which she engaged in two research projects on gesture-controlled interactive music and artistic interactivity in hybrid networks. In her postdoctoral research projects funded by the Fritz Thyssen Stiftung, the Cluster of Excellence «Languages of Emotion», the Hanse-Wissenschaftskolleg, among others, she attempted to develop an aesthetic theory based on the relationship between kinaesthesia and empathy.

In recent practices of electroacoustic music, sonic experience has increasingly been approached through multimodality—mediated by kinaesthetic experience—rather than monomodal perception on the one hand and through interactivity among composition, performance and reception as well as between human and non-human actants (à la Bruno Latour) participating in interactive practices of sound generation and modification on the other.

Against this background, my paper tackles the questions of (1) how an aesthetic function of sound is enhanced when incorporating a kinaesthetic dimension into sonic art practices and (2) how the aesthetic experience of music and sound emerges in the course of interactive practices of sound generation and modification, which are realised in diverse forms of performance beyond concert performance.

First, several artistic strategies dealing with kinaesthetically-based sonic experiences in current projects of electroacoustic music and sound art, which includes sound sculptures and sound installations, are assessed, directing the focus of discussion towards

- the relationship between objective parameters of sound—shaped by duration, intensity, directionality, and height and depth—and structures of sonic experience, as investigated in philosophical, neurobiological and musicological contexts;
 - the relationship between shaping sound and shaping bodily gestures, a longstanding topic of intensive investigation in both artistic and scientific research;
 - a tacit form of sonic knowledge that is action-oriented and kinaesthetically-based, a factor only very recently taken into account in sound studies;
 - the relationship between culturally-based sonic and gestural knowledge—a theme to be explored, grounded in research on three aspects mentioned above.
- Secondly, several projects of interactive sound installation exhibited in a museum and integrated into our daily environment are introduced and theoretically discussed, taking into account
- the affordances and constraints offered by an interactive sound installation concerning the aesthetic experience emerging in its course;

- the cultural context in which an art project is situated, related to recent discussions on situated aesthetics;
- different degrees of interactivity between the system for sound generation and modification and its users.

Selective bibliography:

Kim, Jin Hyun (2012). Embodiment in interaktiven Musik- und

Medienperformances – unter besonderer Berücksichtigung medientheoretischer und kognitionswissenschaftlicher Perspektiven. Osnabrück: epOs.

Seifert, Uwe, Jin Hyun Kim, and Anthony Moore (Eds.) (2008). Paradoxes of Interactivity: Perspectives for Media Theory, Human-Computer Interaction, and Artistic Investigations. Bielefeld: transcript.

Kim, Jin Hyun, Son-Hwa Chang, Lüder Schmidt, Jochen Arne Otto, Benjamin Buch, Uwe Seifert, and Pieter Coussement (2010). “playing_robot”: An Investigation of Situated Cognition in the Context of (Artistic) Human-Robot Interaction Design. Proceedings of the 1st IROS 2010 Workshop on Robots and Musical Expressions 2010 (IWRME-01), pp. 65-72.

Kim, Jin Hyun (2008). From Interactive Live Electronic Music to New Media Art. In Uwe Seifert, Jin Hyun Kim, and Anthony Moore (Eds.), Paradoxes of Interactivity: Perspectives for Media Theory, Human-Computer Interaction, and Artistic Investigations (pp. 282-297), Bielefeld: transcript.

Kim, Jin Hyun and Uwe Seifert (2006). Embodiment: The Body in Algorithmic Sound Generation. Contemporary Music Review 25/1-2 (2006): 139-149.

Site and Time Specificity in the Performance of Live Electronics.

Theodoros Lotis
Music Department Ionian University

Theodoros Lotis studied the guitar, flute, music analysis and composition and sciences of art and plastic arts in Greece, Belgium and the UK. His music has been performed at festivals in Europe, Australia, America and Asia, and has received a number of awards and distinctions. He has done commissioned work for Musiques et Recherches, Sculpted Sound Composers Competition, Amici della Musica di Cagliari, the festival Visiones Sonoras, the clarinetist Esther Lamneck and for dance and theatre companies. He has been teaching electronic composition at Goldsmiths College, University of London, the Technological and Educational Institute of Crete and the Aristotle University of Thessaloniki. He is Assistant Professor at the Ionian University of Corfu, Greece. He is founding member of the Hellenic Electroacoustic Music Composers Association (HELMCA) and the Hellenic Society for Acoustic Ecology. His music has been released by Empreintes Digitales. www.theodorelotis.com Email: thelotis@gmail.com

This paper examines the adaptation of site and time specific processes in the performance of live electronics. A worked example of a site and time specific concert in a bus is provided, allowing for the sharing and critiquing of the methods and techniques.

The site and time specificity has been emerged from, and is mostly related to the visual arts, incorporating dance and theatre performance. Although individual examples can be found, site and time specificity has not been fully and systematically developed into the practice of live electronics. A site and time specific performance adopts and uses the unique characteristics of a chosen location and the time structure of the activities that take place in that location. Specificity is related to particular and identifiable conditions of a site, as opposed to its abstract characteristics. Site and time specificity allows us to expand in reasons and applications regarding performance concerts, to extensively explore the scope of performance for public, to embrace diverse practices and new methodologies for performance, to intervene in the daily public realm and to produce performances to be

performed at unique, non-typical and specially adapted locations. Site and time specificity provides new contextual content during the concert and allows us not only to produce unique performances but also to develop unique musical styles.

Site and time specificity observes the impact to the sonic environment of the chosen location caused by

a) The specific conditions in the location (how many people (if any) occupy the site and under which conditions, which are the sound bodies that compose its soundscapes, which are their triggering causes etc.).

b) The time structure in the location (whenever a time-based activity is related with the site) and its impact to the overall sonic evolution.

The discovery of new concert spaces, the conscious and/or unconscious participation of the visitors, the new ideas for sound organization emerging from the locations are all added musical values that spring out of the site and time specific processes.

The bus setting: a *site and time responsive* instrument.

The Live Electronics Ensemble of the Music Department of the Ionian University has adopted and developed a site and time specific approach for some of its performances. A worked example of a concert in a bus is analyzed along with all the stages of its preparation, which consists of:

- The sonic analyses of multiple recordings of the bus.
- The building of the time structure of the performance on the basis of the time structure of the route of the bus.
- Analysis of the social behavior of the passengers.
- A risk assessment.

The *ideal state* during a site and time specific performance is based on the assumption that both the specific conditions of the chosen location and its time structure will remain stable and, more or less, similar to those that have been studied and analyzed during the preparation stages. However, this is not always the case. Irregularities or deviations may appear during the concert testing the reflexes of the performer/s. Such irregularities may be a *Site Occupancy Distortion* or a *Time Disturbance*. For example, a larger than usual occupancy by travelers on the bus may alter its acoustics and block out the placement or motion of the performers. Moreover, an external cause,

such as traffic congestion, a car accident or a blocked road that prevents the regularity of time may also lead to unexpected results.

An aesthetic criticism for site and time specific performances would undoubtedly be extended to include architectural and environmental aspects, as well as patterns of social behavior and cultural reflections.

Selective bibliography:

Argan, G. C. 2012. *The Modern Art*. Creta University Press.

Gombrich, E. H. 2000. *Art and Illusion*. Princeton University Press.

Lotis, T. 2011. *Tribalism and Local Structures in a Music and Video Installation*. World Forum for Acoustic Ecology Conference "Crossing Listening Paths". 3-7.10.2011. Ionian University, Corfu, Greece. EMS Conference 2011 "Sforzando". 14-18.6.2011. N.Y.U., New York, USA.

Lotis, T. 2003. *The Creation and Projection of Ambiphonic and Geometrical Sonic Spaces with Reference to Denis Smalley's Base Metals*. Organised Sound 8(3) 2003. p: 257-267. Cambridge University Press.

Pearson, M. 2010. *Site-Specific Performance*. Palgrave Macmillan.

Control or Play?

Per Anders Nilsson
Academy of Music and Drama
University of Gothenburg, Sweden
pan@hsm.gu.se

*Per Anders Nilsson (1954) Improvising electronic musician, electroacoustic composer, and researcher. Studied saxophone and electroacoustic music from 1981-87 at the School of Music at University of Gothenburg. In 2011 he finished his PhD thesis *A Field of Possibilities: Designing and Playing Digital Musical Instruments*. In addition to playing and composing he holds a position as professor in music and are vice prefect for research. Nilsson has been played at several ICMC conferences such as Aarhus, Banff, Thessaloniki, Beijing and Miami as well as been commissioned at GRM, who commissioned his *La gamme voiture XM* by GRM in Paris 1999. Nilsson has also been a visiting scholar at CNMAT in Berkeley; CREATE in Santa Barbara, and CCRMA at Stanford. Nilsson was music coordinator for ICMC 2002.*

In many performances of today with so-called laptop music a lack of perceptible connection between what you see and what you hear is common. Regardless the perceived quality in music produced, from the listeners point view the player could rather be reading mail than playing. This paper discusses the perceived relation between bodily gestures and sound produced on digital musical instruments. Furthermore it proposes a classification that distinguishes between different classes of instruments and playing types. Its theoretical frame takes as its point of departure concepts from the field of ecological psychology and perception; notably Gibson (1986), and more recent adaption that deals with perception of sound; Clarke (2005) in general and Norwegian Refsum Jensenius (2007) in particular. A major tenet at Refsum Jensenius is his distinction between *Action-sound couplings* and *Action-sound relations*. On the one hand Action-sound couplings refer to contexts wherein we clearly perceive the relations between a human action and sound produced, and our common acoustic musical instruments belong to this group. On the other Action-sound relations connote much weaker relations, and electronic

musical instruments are the obvious example: e.g. on a digital piano we cannot be absolutely sure of the audible outcome: the instrument may be silent if someone has unplugged the power cord, or the instrument may sound like a different musical instrument, such as a vibraphone. A further distinction is made between *electronic devices* and *virtual devices*. To produce a sound on an electronic device, such as a doorbell, usually we are interacting with some physical part of the device in question, like a button. In a virtual device the sound is not under direct control; rather the device responds according to a designed virtual action sound link. Moreover, action-sound couplings comprise of an *action-sound palette* of conceivable audible outcomes from a certain object, depending on such properties as material, the force of the impact, and the shape of the objects involved.

In this paper I propose a taxonomy¹ for electronic instruments that distinguishes between 1) direct gestural control, *playing mode/instruments*, 2) indirect control, *controlling mode/instruments*, and 3) *effects*. *Playing mode* refers to acoustic instruments

¹ Presented in Nilsson (2011).

like piano and violin, which features action-sound coupling. This implies that a bodily gesture carried out by a player on such an instrument is directly and proportionally audible; its *action-sound link* is strong. Controlling mode is primarily a phenomenon in conjunction with electronic instruments and devices with no direct causality between a bodily gesture performed on the interface and audible output; its *action-sound-link* is weak. Examples of historic controlled instruments are Raymond Scott's ² *Electronium* from the 50s, and the *M* ³ software from the 80s.

An additional distinction occurs between *active control* and *active monitoring*. The former is close to playing, however carried out on a controlled instrument, whereas the latter deals with automatic generative processes where the instrument is left untouched, but adjusted if necessary.

I claim that the perceived connection between bodily action and sound produces affects the listening experience, regardless what it sounds like. My conclusion is that electronic musicians must take this into consideration when designing; choosing, and playing computer based musical instruments and interfaces for live performances.

Selective bibliography:

Clarke, E. F. (2005). *Ways of listening: an Ecological Approach to the Perception of Musical Meaning*. New York, N.Y., Oxford University Press.

Gibson, J. J. (1986 (1979)). *The Ecological Approach to Visual Perception*. New York, Psychology Press.

Nilsson, P. A. (2011) *A Field of Possibilities: Designing and Playing Digital Musical Instruments*. Academy of Music and Drama, University of Gothenburg.

Refsum Jensenius, A. (2007). *ACTION – SOUND, Developing Methods and Tools to Study Music-Related Body Movement*. Department of Musicology. Oslo, University of Oslo.

² Raymond Scott is presented in the CD-box *Manhattan Research Inc.* (Blom 2000).

³ Chadabe developed and commercialized the softwares Jam and M together with David Zicarelli, John Offenhartz and Antony Widoff in the late eighties.

Access Beyond The Concert Performance: Practical Consequences To On-Demand Online Electroacoustic Music Streaming

Jean-François Denis

empreintes DIGITALes / electrocd.com / electrotheque.com

*Jean-François Denis first discovered electroacoustics during a summer course given by Kevin Austin in 1981 at Concordia University in Montréal (Québec). Hooked, he pursued music studies at Mills College in Oakland (USA) under David Rosenboom (MFA, 1984). He has worked in live electroacoustics (solo and in ensembles) and works for dance and multimedia until the mid-90s. He is the artistic director of the empreintes DIGITALes (1990) record label. In 1994, for his exceptional commitment to Canadian composers, he was awarded the Friends of Canadian Music Award organized by the CMC and the CLC. In 1995 he was presented the Jean A Chalmers Award for Musical Composition — Presenters' Award for his contribution to the diffusion of new Canadian (electroacoustic music) work. In 2011 he was awarded the Prix Opus 2009-10: Artistic Director of the Year for his 20-year involvement in sound recording publishing / production.
http://www.electrocd.com/en/bio/denis_jf/*

A historical overview of Montréal-based electroacoustic music label empreintes DIGITALes from its foundation in 1990 until today: the challenges of access it was addressing, the content it is focusing on, the forms it has selected, the music publishing scheme it borrowed, the outreach means it has used.

Over the same time period, schematizing the changes in the cultural and social landscapes caused by the technological changes in the means of communication.

In view of these, questioning the relevance of a "label" and its roles in curating,

presenting (including packaging), and outreaching by further identifying the needs and means of 21st-century individual listeners and educators (this involving several conference attendants in an open discussion).

Finally positioning the on-demand online streaming service [electro:thèque](http://electrotheque.com/) -- <http://electrotheque.com/> -- vis-à-vis the information-rich online shop electrocd.com and comparing its model to other like services.

Ecosystem or Technical System? Technologically-Mediated Performance and the Music of *The Hub*

Christopher Haworth
University of Calgary

Christopher Haworth is the Eyes High postdoctoral scholar in music at University of Calgary working on Networked Computer Music. Previously, he held a one-year fellowship at McGill University in the Department of Philosophy, where he studied the poetics and politics of 'instruments' in new media performance. His writing has been published in the Leonardo Music Journal (MIT Press) and the edited collection Resonances: Noise and Contemporary Music (Bloomsbury Press) amongst others. He is also a composer of computer music, with interests in psychoacoustic phenomena and its creative applications, 'technological aesthetics', and issues surrounding liveness and authenticity in technologically-mediated contemporary musics.

Over the past decade, the notion of the 'ecosystem' has been gaining traction amongst composers and theorists as a powerful metaphor for the analysis of technologically-mediated music that privileges performance. This new musical ontology has helped situate heavily technologised musics within a wider field of 'musicking', and away from their common sanctuary in scientific and technological discourses. To quote Jonathan Impett: "music is understood as a dynamical complex of interacting situated embodied behaviours... *All* interact in the same space by a process of mutual modelling, redescription, and emergent restructuring (my italics)" In an influential paper from 2007, Simon Waters expanded upon Impett's proposition, considering this situated and embodied understanding of performance in terms of the performer / instrument / environment relationship, and reminding us that these commonly separate classes in fact sustain, interact with, and flow into one another; hence, it is an ecosystem.

The paper will examine the ecosystem metaphor in regard to human-technological systems, tracing its development back to post-war cybernetic theory and the study of the structures, constraints, and affordances of

regulatory systems. The aim is to recover some of the implicit assumptions the model incorporates, and, ultimately, to question its utility for understanding technological musics. This will be supported by reference to the work of the pioneering Bay Area electronic music ensemble, The Hub. Widely regarded as the first 'network performance' group, The Hub were early experimenters with concepts that have since become central to the ecosystem metaphor in music: emergence; complexity; dynamic, non-hierarchical interaction amongst elements; networks. Indeed, writing in 1991 about the groups activities, Mark Trayle quoted the cyberneticist Gregory Bateson, writing: 'ecology, in the widest sense, turns out to be the study of the interaction and survival of ideas and programs (i.e. differences, complexes of differences, etc.) in circuits' (Bateson 1975, 483). But there is an incompatibility here. How do we reconcile this idea of a broad, homogenous, and self-regulating system dependent upon feedback mechanisms with the much more volatile and unpredictable types of systems that technical instruments constellate – what Bertrand Gille called 'technical systems'? I'd argue that it is the The Hub themselves that bring this question to light, through their innovative, highly technological practices of the last 30

years. Consistently forced to overhaul their software, hardware, and communications media - either via obsolescence or the development of new and better tools - their working environment was anything but an ecosystem. The development of MIDI, the Internet, and OSC revolutionised their practice, superseding previous systems together with the works that were composed for them. Against the objection that their music must adhere to a different organisational logic than the surrounding technological environment that sustains it – a technical-aesthetic division that conceals a weak instance of instrumentalism - I'll try to show that, again, it is The Hub themselves that call this into question. This, afterall, is a group who refused to define whether “the Hub” refers to a configuration or a group of individuals, the accumulated hardware and software, or the act of generating shared information (Gresham-Lancaster 1998).

The larger aim of this paper is to raise again the role and agency of technology in electroacoustic music, a long-term point of anxiety and hesitation amongst composers and theorists in the field.

Selective bibliography:

Bateson, Gregory. 2000. *Steps to an Ecology of Mind: Collected Essays in Anthropology, Psychiatry, Evolution, and Epistemology*. New edition edition. Chicago: University of Chicago Press.

Gresham-Lancaster, Scot. 1998. “The Aesthetics and History of the Hub: The Effects of Changing Technology on Network Computer Music.” *Leonardo Music Journal* 8: 39. doi:10.2307/1513398.

Heidegger, Martin., 1977. *The Question Concerning Technology And Other Essays*, New York: Harper & Row

Bateson, Gregory. 2000. *Steps to an Ecology of Mind: Collected Essays in Anthropology, Psychiatry, Evolution, and Epistemology*. New edition edition. Chicago: University of Chicago Press.

Gresham-Lancaster, Scot. 1998. “The Aesthetics and History of the Hub: The Effects of Changing Technology on Network Computer Music.” *Leonardo Music Journal* 8: 39. doi:10.2307/1513398.

Stiegler, Bernard, Richard Beardsworth, and George Collins. 1998. *Technics and Time Vol. 1, Vol. 1.*. Stanford, CA: Stanford University Press.

How and why do we preserve electroacoustic music

Daniel Teruggi
GRM Paris

Composer, head of GRM, head of research, Institut National de l'Audiovisuel (Ina) France

Preserving electroacoustic music has always been considered a side activity, often related to media or software preservation. However the challenge in music is the fact of reperforming a work in a near or far future and not only keeping the components for a potential future access. This perspective changes very strongly the preservation task; up to now few works have been really preserved with representation in the future perspective, in many cases a deep archeological work has to be undertaken to reperform a work and many works have been

definitively lost due to a lack of methodology or tools to undertake their conservation. What is the situation today? Has it really changed from the first days of *musique concrète* or is it still an unclear action that is sometimes undertaken. Methodologies and tools are starting to exist; maybe our future will not be as dark as it has happened with many works of the past and we will be able to rely on effective tools to carry on this indispensable activity.

Listening behaviors and formal representation of an extract of acousmatic music in non-expert listeners

Pascal Terrien
Université catholique de l'ouest / OMF
Conservatoire national de musique
et de danse de Paris
(pascal.terrien@wanadoo.fr)

Nicolas Marty
Université Paris-Sorbonne / OMF
(nicodria@hotmail.com)

Pascal Terrien is Senior Lecturer in Musicology at the Université Catholique de l'Ouest, and in Educational Sciences at the Conservatoire National Supérieur de Musique et de Danse de Paris (C.N.U. 18th and 70th sections). His entire research has concentrated on musical cognition based on extensive work on musicology and the educational sciences. He sheds new light on the mechanism of the construction of knowledge and skills in music. He is a permanent researcher at l'Observatoire Musical Français E.A. 206, Paris-Sorbonne, équipe MUSECO (Musique, société, enseignement et cognition), and at present directs a research group GRIHLAM at U.C.O., and "Didactic Research" at the C.N.S.M.D. in Paris.

Last publications:

« Salomé d'Antoine Mariotte, entre romantisme et symbolisme musical : un opéra inabouti », in Hamidovic, David, *La rumeur de Salomé*, collection Cerf Histoire, Paris, éditions du Cerf, 2013, p. 193-221.

« For a Didactical Approach to Electroacoustic Musics : The example of Metallica by Yan Maresz », *Organised Sound*, Volume 18, Special Issue 02, August 2013, pp. 161-169.

« From composition to Reception. Identity of Meaning and Significance », *EMS-12*, « Meaning and meaningfulness in electroacoustic musics », *EMS 12 Stockholm*, 2013.

Nicolas Marty has a Master Degree summa cum laude of Musicology in Paris-Sorbonne (2012) and Computer-Assisted Composition degree summa cum laude in Bordeaux conservatory (2010). He is Lecturer in Computer Music at the Université Bordeaux III. He won different distinction and prize: Distinction « Terrain-Formation » granted by the Observatoire Musical Français (Paris-Sorbonne) for the publication of « Vers une narratologie naturelle de la musique » (2012), and « Professional Jury Prize » at the Musiques en Courts competition for the piece for piano prepared in real-time on the short movie « Corridor » (2012). Actually, he is in Ph.D. in musicology at the Université Paris-Sorbonne and in Bachelor's degree of psychology at the Université Paris 8.

Last publications:

« Presque Rien, de l'anecdote au surréalisme », *Musurgia*, vol. XVIII/4, 2011 (2012), p. 61-76.

« Vers une narratologie 'naturelle' de la musique », *Cahiers de narratologie*, vol. 21, « Rencontre de narrativités : perspectives sur l'intrigue musicale », dir. R.Baroni et A.Corbellari, 2011.

« Creavolution with Trevor Wishart », *Journal of Music and Meaning*, vol. 10, 2011, p. 81-106.

This research follows our presentations at Stockholm's EMS12 conference.

Pascal Terrien studied the understanding of existing relationships between the auditory experiences of listeners familiar with musical listening, but who are not specialists of electroacoustic works, and their perception of an electroacoustic work. He tried to understand how non-expert listeners used perceptive strategies drawn from other listening situations (Terrien 2006, 2012).

Nicolas Marty studied the "narrativization" of anecdotic electroacoustic music, by connecting together the listening behaviors proposed by Delalande, Anderson, Baboni,

Kaltenecker, Schaeffer, as well as the three forms of cognitive representations studied by Meunier (Marty 2012).

It is difficult to study listening behaviors regarding electroacoustic works which present a musical discourse or temporality detached from traditional references. Listeners do tend to hold on to such characteristics in their listening and interpretation of a work.

For our current work, we chose two research methodologies applied to the same musical extract – the first two minutes of Elizabeth Anderson's *Chat Noir* (1998), an acousmatic piece presenting a musical discourse without

anecdotic connotations and whose syntax is abstracted from the materials.

On the one hand we collected testimonies written during and right after the listening by people who were not experts in electroacoustic music. On the other hand, we did seven explication interviews with listeners who were either experts or non-experts in electroacoustic music. We studied the testimony following a *single* hearing, in order to determine what happens during the *discovery* of the extract, as well as what remains after this discovery, rather than what is constructed because of repeated hearings.

We will present for this conference the results regarding written testimonies. Two questions were asked to the listeners, who first had to *write – while listening – single words about what they were hearing*; then listeners were asked to write, after the end of the extract, what struck them the most.

We have three main hypotheses:

1. We should find in the listeners' testimonies the various listening behaviors defined by Imberty (1979) with the notion of *schemes* (kinetic, emotional and spatial) as well as by Delalande (2013 – reproduced by Alcazar 2011 and extended by Anderson 2011) with the study of reception behaviors (empathic, figurative and taxinomic).
2. We should find different kinds of relations to the sound material, the form, duration and chronology of the extract (which might be linked to listening behaviors and should appear through the ordering of the words written while listening and the nature of “*what* has struck the listener the most” (moment, sound gestalt, one characteristic of a sound, the

character or expression of the extract...).

3. Connecting together the numerous testimonies should offer us interesting data about the musical extract itself: if an element appears often enough in the listeners' discourses, it might be a relevant characteristic of the work. Might we then relate it to what the composer wanted to convey? This is the hypothesis Pascal Terrien defended in this doctoral thesis, about the links and resemblances between musical data as it is created by the composer and as it is perceived by listeners. The hearing of a musical work is fundamentally anthropological.

Selective bibliography:

Alcazar, A.A. (2011) Analyse de la musique électroacoustique, genre acousmatique, à partir de son écoute : bases théoriques, méthodologie et but de la recherche, conclusions. *Lien – Revue d'esthétique musicale*, 3, pp. 25-34.

Anderson, E. (2011). *Materials, Meaning and Metaphor: Unveiling Spatio-Temporal Pertinences in Acousmatic Music*. Unpublished Ph.D. thesis. London City University.

Delalande, F. (2013). *Analyser la musique : pourquoi, comment ?*. Paris: Ina Éditions.

Imberty, M. (1979). *Entendre la musique: sémantique psychologique de la musique*. Paris: Dunod.

Toward Sound Installation, Spatial metaphors in the musical avant-garde of the mid 20th Century

Nye Parry

Trinity Laban Conservatoire of music and dance

Nye Parry has made sound installations for major museums including the National Maritime Museum, the Science Museum and the British Museum in addition to concert works and more than 20 contemporary dance scores.

*While a research fellow at CRiSAP, University of the Arts, he developed the installations *The Exploded Sound*, and *Significant Birds* for the Science Gallery Dublin, which is currently on tour in the USA. He specialises in navigable soundscapes and has recently contributed a chapter to the *Oxford Handbook of Interactive Audio*. From 2003 – 2011 he was programme leader for the MA in Sonic Arts at Middlesex University. He has a PhD in Composition from City University and teaches at the Guildhall School of Music and Drama and Trinity Laban Conservatoire. www.nyeparry.com*

In this paper I will contextualize the practice of sound installation within the musical discourse of the mid 20th century when it emerged. I will suggest that composers of the musical avant-garde of the 50s and 60s began to conceive of music in spatial terms, abandoning narrative approaches in favour of an exploratory metaphor of musical structure in which the listener is actively engaged in navigating a musical landscape. Drawing on theories of embodied cognition I will examine how the statements of composers associated with serialism, chance composition and aleatoric music reveal a shift in the conceptual metaphors used to understand musical time. I suggest that the emergence of sound installation practice is routed in part in a desire to experience the spatial structure of contemporary music as an embodied exploration of the musical spaces suggested by this conceptualization.

Lakoff and Johnson, in their major treatise on embodied cognition *Philosophy in the Flesh* (1999) identify two fundamental metaphors for our understanding of time. These relate directly to our bodily experience of what they call motion situations:

Every day we take part in ‘motion-situations’—that is, we move relative to others and others move relative to us. We automatically correlate that motion . . . with those events that

provide us with our sense of time.
(Lakoff & Johnson 1999, p.151)

Of particular interest are two fundamental metaphors for time, which Deidre Gentner (Gentner 2003, 203) identifies as the *ego-moving* metaphor and the *time-moving* metaphor: The former, in which time is considered stationary and the observer moves through it, is characterized by such statements as “I am going to do that” or “We are fast approaching the holidays.” The latter, in which time moves past a stationary observer, is reflected in the expressions such as “the years to come” or “night follows day” (204).

In their seminal paper *Something in the Way She Moves* (2003), Johnson and Larson suggest that both these conceptions also structure our understanding of music.

Examining the writings of composers active in the 1950s and 60s it is striking how they increasingly describe their music in spatial terms. The development of Cage’s distinction between *Structure* and *Form* (Cage 1978; Pritchett 1993; Jenkins 2002) is particularly prescient, as structure, originally conceived in terms of duration becomes an a-temporal, essentially spatial organization, giving rise to the temporal continuity of musical form.

Boulez too frequently draws on spatial metaphors, casting the listener in the role of

a traveller through a musical labyrinth or town-scape:

I have often compared a work with the street map of a town: you don't change the map, you perceive the town as it is, but there are different ways of going through it, different ways of visiting it. (Boulez & Deliege 1976, p.82)

For Boulez as for Cage the consequence of this new conception of musical structure is the introduction of a certain level of performer choice, while the ultimate responsibility for the musical structure (conceived spatially) remains with the composer:

Thus the open-form conception of musical composition grows naturally out of the adoption of a moving-listener metaphor, which accompanies the loss of the teleological models of the tonal system.

This is the climate in which sound installation emerges, with works such as Max Neuhaus's Drive-in Music (1967), in which the listener literally drives through the musical space. Thus sound installation practice can be seen to grow out of the musical concerns of post-tonal composers, allowing listeners to directly interact with the musical material, exploring the underlying

spatial structure through an embodied experience of space and without the mediation of a performer.

Selective bibliography:

Grant, M.J., 2005. *Serial Music, Serial Aesthetics: Compositional Theory in Post-War Europe*, Cambridge University Press.

Jenkins, C., 2002. Structure vs. Form in The Sonatas and Interludes for Prepared Piano. In D. Patterson, ed. *John Cage: Music, Philosophy, and Intention, 1933-1950*. Routledge, pp. 239–262.

Johnson, M.L. & Larson, S., 2003. "Something in the Way She Moves"-Metaphors of Musical Motion. *Metaphor and Symbol*, 18(2), pp.63–84.

Lakoff, G. & Johnson, M., 1999. *Philosophy in the Flesh: The Embodied Mind and Its Challenge to Western Thought* New edition., Basic Books.

Pritchett, J., 1993. *The Music of John Cage*, Cambridge University Press.

Spitzer, M., 2004. *Metaphor and Musical Thought* 74th ed., University of Chicago Press.

Taking Time and Taking Place: Deconstructing the Studio aesthetics

Suk-Jun Kim
University of Aberdeen

Focusing on imaginal listening and place memory through sound, Suk-Jun Kim's compositions have received a number of international awards. His practice-based research has produced a series of sound installations, including Humming Project, which collects hums of favourite tunes from people in Berlin, Silver City, and Aberdeen. Kim is currently working on a new interdisciplinary project titled The Fate of Place. Kim is Lecturer in Electroacoustic Music and Sound Art, and Programme Director of MMus in Sonic Arts at the University of Aberdeen. Contact: s.kim@abdn.ac.uk

One characteristic of a typical electroacoustic concert, which sets listeners' experience uniquely apart from that of a traditional classical—instrumental—concert, is that listeners feel as if they were invited to the composer's studio and were to witness his or her very act of making. The dramatic now-ness of happenings and the sense of assumed immediacy from the composer to the listener are sometime so compelling that listeners may even imagine as if they were participating in composing the piece they hear. This phenomenon is interesting as it shows that, in electroacoustic concerts, the composer's studio becomes enlarged—that is, the concert venue turns into the composer's own studio. While it appears to be natural (certainly exciting for some) and benign, the consequences of the transmutation of the concert hall into the large version of the composer's studio are significant in the way listeners experience concert performances of electroacoustic music.

This paper takes a view that by turning the concert venue into his or her own studio in these electroacoustic concerts, the composer effectively brings to the audience the so-called *Studio aesthetics*, which have been established from the beginnings of the historic studios in the 1950s onward. Designated as a set of compositional aesthetics or a particular set of attitudes toward composing (and, consequently, listening), which are borne out of the composer's peculiar relationship with sound—and consequently with the lived world—that has been established in, and enhanced by, a studio, the Studio aesthetics have core elements, hinging on technical and artistic tendencies that are not

only revolutionary and state-of-the-art, but also traditional and conservative. However, the emergence and development of new technologies in the 80s and early 90s, which can be symbolised by personal computers like the Apple and the rise of numerous personal studios thanks to technical standardisations among major electronic instrument makers like MIDI and the development of new, portable, affordable, and personal audio equipment, has effectively questioned and challenged the Studio aesthetics. Today in the environment of electroacoustic composition, we witness the co-existence of the Studio aesthetics from the tradition of electroacoustic music and those which each individual composer brings to the studio.

The paper argues that the homogeneity of the relation between the composition and audience is mainly due to these Studio aesthetics, which, therefore, need to be examined. Accordingly, the paper discusses key properties of the Studio aesthetics, such as *neutral, focal and hierarchical, detached, separated, and afloat from the lived world, reproducible, subtractive, fixed composer-listener relationship, and space-specific*, and goes on to examine the consequences of the assumed Studio aesthetics. Furthermore, of all the consequences of the Studio aesthetics in relation to listeners' experience of electroacoustic music at concert settings, this paper focuses on the issue of time experienced in listening as it is believed that listeners' experience in typical electroacoustic concerts is largely conditioned by having been fixed, more than anything else, in time. The paper proposes *taking time* and *taking place* as

two methodologies for deconstructing the Studio aesthetics, and consequently, listeners' experience of electroacoustic music, and argues that by taking time, the composer's ultimate goal would be to turn the venue for electroacoustic concerts from a space, which assumes to be 'flat' or 'homogeneous', into a place that offers the possibility of 'singular' listening experiences in time. To explore what *taking time* and *taking place* mean as methodologies, the paper discusses the Bachelard's *instant*, the vertical time, which is a critical alternative to Bergson's *duration* and the horizontal time as a consequence in relation to Casey's *glancing* and *gazing* as a way of experiencing the world as a totality. Finally, the paper posits the workings of *taking time* and *taking place* by discussing *The Fate of Place*, the author's cross-disciplinary project on place, to demonstrate how the ideas of the horizontal—vertical time taking and *glancing-gazing* might be performed or experienced in this sound art-performance piece,

and also how they may have to do with the deconstruction of the Studio aesthetics.

Selective bibliography:

Bachelard, Gaston. *Intuition of the Instant (Northwestern University Studies in Phenomenology & Existential Philosophy (Paperback))*. Northwestern University Press, 2013.

Casey, Edward S. *The Fate of Place: A Philosophical History*. Berkeley: University of California Press, 1997.

Casey, Edward S. *The World At a Glance (Studies in Continental Thought)*. Indiana University Press, 2007.

Lefebvre, Henri. *Rhythmanalysis: Space, Time and Everyday Life (Bloomsbury Revelations)*. Bloomsbury Academic, 2013.

Weschler, Lawrence. *Seeing is Forgetting the Name of the Thing One Sees: Expanded Edition*. University of California Press, 2009.

***Switch* by Benjamin Thigpen and Darren Copeland: a hybrid case of electro-acoustic live performance work**

Luisa Santacesaria
University of Pavia, Master Student, Musicology

Luisa Santacesaria is a Master student at the Faculty of Musicology of the Università of Pavia in Cremona, Italy. She is currently working on her thesis about spatialization in electro-acoustic music. Since 2009 she has been working at the Centro Studi Luciano Berio, Florence. She graduated in piano at the Scuola di Musica di Fiesole (Florence) where she also studied chamber music. She has been studying and documenting Mario Bertoncini and his music for several years, both as a musicologist and as an interpreter of his works for prepared piano, which she has performed in Cremona (SpazioNovecento Festival, 2011) and Montreal (McGill University, 2012). Since January 2014 she has been collaborating with Tempo Reale for a sonorization project of multimedia halls in the new Museum of the Twentieth Century (Museo del '900) in Florence.

In contemporary practice, the performance of electroacoustic music features a broad array of different situations, challenging the idea of “concert”, a core moment of music consumption in Western society. Although the institution of the concert is contested, not all the new compositions are dismissing it altogether, but instead create brand-new hybrid works and contexts that deserve a deeper insight.

This dichotomy between traditional performance practices and venues, and new conceptions going beyond traditional spaces of electroacoustic music is particularly clear in the catalogue of Benjamin Thigpen.

In collaboration with Darren Copeland, in 2011 Thigpen realised *Switch*, a multi-channel piece that combines the characteristics of electroacoustic composition, site-specific work and, partly, sound installation. *Switch* requires a dual spatialization system: a fixed spatialization (8 loudspeakers settled around the audience), and a mobile one (one or two Audio Spotlights – hand-held directional speakers) for the live spatialization. The performer interacts with the space and the audience by holding and directing the speaker's soundbeam towards walls and other flat surfaces during the performance.

The physical space of the performance becomes a new central parameter for the choices concerning the spatialization of the sounds. Moreover, Thigpen and Copeland shape the piece taking into account the acoustic characteristics of the concert space. The performance of *Switch* is also built around the listener: the spatialization is conceived on the base of a “democratic” managing of the sound, with the Audio Spotlight pointed directly towards (or on the back, or on the side of) any member of the public, in turn, regardless of their position in the room.

Switch features an interest dichotomy between both fixed and variable elements; nevertheless it has a pre-defined general plan that can be freely followed by the performers. The piece has not a linear form, but more a 3-dimensional form: every listener, depending on the place where seated, in each moment listens to something different to the others, but each experiences the same piece, the same event.

To better frame *Switch*, it could be interesting to compare it with two other works of the same composers: *Still* by Benjamin Thigpen and *Streams of Whispers* by Darren Copeland. *Still* is a multichannel piece composed in 2009. The sound material

comes from recordings of actions and movements within different environmental contexts – suggesting an adapted version of Normandeau’s “cinema for the ears” – and his spatialization is defined during the recording of the sounds, integrated with the distribution on 5.1 channels created in studio for the live performance. Some of these sound materials are also in *Switch*, not as pre-recorded but as sounds produced and performed live. Copeland’s *Streams of Whispers* is a piece that went through two different stages: it was originally composed as sound installation for a stairwell of a palace in Toronto, and then converted in a 12’ concert piece. In this process of adaptation, Copeland maintains the characteristics of the original sound installation.

On one hand the spatialization, intended as strict relationship between movement and sound as cause-and-effect process, and the intrinsic narrative in the use of distinctive

sound materials (*Still*), on the other the cohabitation of different categories in the same work (*Streams of Whispers*), influenced the compositional idea underlying *Switch*: a composition conceived as a live performance work, which features both an acousmatic electroacoustic piece, with its own identity, but also an open and context-specific one, including the concepts of improvisation and sound installation.

Selective bibliography:

Copeland, Darren. “The Audio Spotlight in Electroacoustic Performance Spatialization”. Toronto Electroacoustic Symposium (TES) 2011, CEC – eContact! 14.4. Montreal: March 2013.

De La Motte, Helga. “Tönende Objekte und klingende Räume”, *Handbuch der Musik im 20. Jahrhundert* 12. Laaber: Laaber-Verlag 1999.

ACKNOWLEDGEMENTS

LARA DEININGER
RUTH LÖSSLER
JOHANNES LUBBERGER
FRANZISKA SCHINDLER
MARLON SCHRÖDER
CHRISTOPH UNDISZ
LAURA WEBER
FRIEDRICH WEISSBACH

MIRKO BEHRENS
SABINE BETA
CORNELIA HELLHAMMER
ANDREA HUNDERTMARK
BEATE ROESNER
KATHRIN RUSCH
CLAUDIA TRANTOW
ILKA WIESNER



**Electroacoustic Music
Beyond
Concert Performance**

II

10 – 14 JUNE 2014 | BERLIN | GERMANY
UNIVERSITÄT DER KÜNSTE BERLIN,
MASTERSTUDIENGANG SOUND STUDIES
IN COOPERATION WITH TECHNISCHE UNIVERSITÄT BERLIN,
FACHGEBIET AUDIOKOMMUNIKATION AND FREIE UNIVERSITÄT BERLIN

THURSDAY 12 June		JIB GNS	EIN 127		
		Session 11 – chair: John Dack			
09:00	Jean-François Denis	Access Beyond The Concert Performance: Practical Consequences To On-Demand Online Electroacoustic Music Streaming			
09:30	Christopher Haworth	Ecosystem or Technical System? Technologically-Mediated Performance and the Music of <i>The Hub</i>			
10:00	Ricardo Dal Farra	e-music for Humanitarian Actions: The “art! » climate” initiative			
10:30	break		Panel II		
		Session 12 – chair: Morag J. Grant			Session 13 – chair: Dörte Schmidt
11:00	Pascal Terrien Nicolas Marty	Listening behaviors and formal representation of an extract of acousmatic music in non-expert listeners	11:00	Luisa Santacesaria	<i>Switch</i> by Benjamin Thigpen and Darren Copeland: a hybrid case of electroacoustic live performance work
11:30	Nye Parry	Toward Sound Installation, Spatial metaphors in the musical avant-garde of the mid 20th Century	11:30	Simonetta Sargenti	Dramaturgy of sound, mobile sound and digital garden as grounding concepts of multimedia
12:00	Suk-Jun Kim	Taking Time and Taking Place: Deconstructing the Studio aesthetics	12:00	Anthony Tan	Timbre as Vertical Process: Attempting a Perceptually Informed Functionality of Timbre
12:30	lunch		lunch		
13:00	lunch		lunch		
13:30	lunch		lunch		
		Session 14 – chair: Stefan Weinzierl			Session 15 – chair: Marc Battier
14:00	Luca Forcucci	Touching the Audience	14:00	Makato Mikawa	Aesthetic Meaning of Mixed-Media and Intercultural Composition: <i>Water Music</i> (1960) by Tôru Takemitsu and Hisao Kanze
14:30	Georgia Kalodiki	Conceptual strategies in forming electroacoustic sound identities	14:30	Yuriko Hase Kojima	Listening Analysis of Takemitsu's “Water Music”
15:00	Satoshi Morita	Sonic art for intersensory listening experience	15:00	Mikako Mizuno	Sound Arts, Sound Performances and Sonic Arts ---alternative presence of Japanese electroacoustic music
15:30	break				
		Session 16 – chair: Barry Truax			
16:00	Gary Kendall	The Feeling Blend: An Extension of Blend Theory For Feeling and Emotion in Electroacoustic Music			
16:30	Terri Hron	Between the stage and the gallery: objects and spaces in three works by Canadian sound artists			
17:00	Ellen Flügge	Hearing Space			
17:30	Giacomo Albert	The origins of sound installation: case study Turin			
			17:00 Sound Installation III		
			–		
			–		
			22:00		

FRIDAY 13 June		JIB GNS	EIN 127		
Panel I		Session 17 – chair: Jost Muxfeldt	Panel II		Session 18 – chair: Simon Atkinson
09:00	Massimo Avantaggiato	Donatoni: a critical re-appraisal of Quartetto III	09:00	Frédéric Dufeu Alain Bonardi	Analysing the Creative Process through a Modelling of Tools and Methods for Composition in Hans Tutschku's <i>Entwurzelt</i>
09:30	Alba F. Battista	New dimensions of musical enjoyment. The Analysis problem: Luc Ferrari through the Aesthetic-Cognitive Method	09:30	Pierre Couprie Mikhail Malt	Representation: From Acoustics to Musical Analysis
10:00	Michael Clarke Frédéric Dufeu Peter Manning	Barry Truax <i>Riverrun</i> (1986/2004), a case study from the TaCEM project, exploring new approaches to techniques of analysis and re-synthesis in the study of concert electroacoustic works	10:00	Bruno Bossis Laurent Pottier	A Method For the Analysis of the Relation Between Symbolic Notation and Electroacoustic Textures In Hans Tutschku's <i>Entwurzelt</i>
10:30	break		10:30	break	
		Session 19 – chair: Mikhail Malt			Session 20 – chair: Marc Battier
11:00	Jean-Louis Di Santo	Analysis of Incidences/résonances by B. Parmegiani with an acousmatic score	11:00	Lin-Ni Liao	TRANSCULTURATION: Western Intellectual Organization and Far Eastern Spiritual Listening
11:30	Giuliano Obici Alexandre Fenerich	Symphonie pour un Homme Seul - de-acousmatized (SPHUS-d)	11:30	Ruibo Zhang	CHEARS ver.2.0 – Combination and Integration of EARS2
12:00	Cecilia Taher	The unity of opposites: Jonathan Harvey's <i>Advaya</i> for cello and electronics	12:00	Bai Zhao	Heritage of Gérard Grisey in China
12:30	lunch		Sound Space 17:00 & Wave Field – Installation 20:30		
13:00	lunch				
13:30	lunch				
		Session 21 – chair: Pierre Alexandre Tremblay			
14:00	John Dack	Pousseur's 'Huit Etudes Paraboliques': Musical and Social Contexts			
14:30	Mikko Ojanen	Electroacoustic concert and happening performances of the '60s and early '70s in Finland			
15:00	Barry Truax	Electroacoustic Music of Extended Duration: A Question of Format			
15:30	break				
		Session 22 – chair: Julia H. Schröder			
16:00	Miriam Akkermann	COMPUTER NETWORK MUSIC Approximation to a far-scattered history			
16:30	Georg Hajdu	Disposable Music			
17:00	Doug Van Nort	Approaches to Distributed Agency and Shared Musical Meaning in Electroacoustic Improvisation			
20:30	keynote lecture by Miller Puckette				
SATURDAY 14 June		JIB GNS			
		Session 23 – chair: Pierre Couprie			
09:00	Landon Morrison	A Comparative Study of Graphic Representation Tools Based on an Aural Analysis of Philippe Leroux's <i>M.É.</i>			
09:30	René Mogensen	Comparing comprehensibility of analytical representations of electroacoustic music: pictographic versus symbolic			
10:00	Emily Richmond Pollock	The Electronic Manifesto: Scores for Tape and Synthesized Music in John Cage's <i>Notations</i>			
10:30	break				
		Session 24 – chair: Martin Supper			
11:00	Florence Lethurgez	Read music at the concert: program notes of electroacoustic music composers			
11:30	Bertrand Merlier	The Sampler. An historical, musicological and phenomenological study			
12:00	Simon Atkinson Kerry Francksen	Ultra-sensing: moving beyond 'work' and 'venue' in intermedia art			

Dramaturgy of sound, mobile sound and digital garden as grounding concepts of multimedia

Simonetta Sargenti

Conservatorio di Musica «Gioachino Rossini», Pesaro, Italy

Simonetta Sargenti was born in Milan. She's a composer, a performer and a musicologist. Her compositions have been performed in Italy and other European countries. Recently she realised her own audio-visual installations and compositions with interactive instruments in collaboration with architects and visual artists and other important musical works of the twentieth century such as Stockhausen's Mikrophonie I and Mantra and Nono's La lontananza nostalgica utopica futura.

Her recent musicological studies concern Nono's final works with live electronics and Stockhausen's technique of "formula". She participated in several editions of the EMS Conference. She teaches Electroacoustic, History of Music and analysis at the "Rossini" Conservatoire of music in Pesaro. She has lectured at the University of Technology in Kaunas (Lithuania), at the Universidade Catholica Portuguesa of Porto (Portugal) and at the first workshop on Stockhausen's music, "The musical legacy of Karlheinz Stockhausen, looking back and forwards", held in Kuerten, and she presented her own interactive compositions at the Kaunas University of Technologies.

"Listen to music. Not in a single chance to listen. But with different probabilities of transformations in real time". With these words, in 1984 Luigi Nono described his opera *Prometeo*, a «tragedy of listening», an evolving structure where sound is the absolute protagonist. This concept of «mobile sound» made then with live electronics technologies, seems us today to be updated in multimedia forms of expression.

The object of this project is the analysis of some characteristic aspects of Luigi Nono's compositions using live electronics techniques, where we can identify the basis for a new concept of musical performance that goes beyond the traditional idea of "concert". Multimedia works such as audio visual installations are increasingly present in our days. The concept of "dramaturgy of sound" expressed in Nono's works of the '80s, seems to presage them.

The concept of «dramaturgy of sound» also includes a consideration of space parameters in musical composition. Architecture is in turn involved in it. In fact Nono considered the space in the realization of his final

works, in order to build now a virtual space made with live electronics, now a real place of the performance such as the ship structure in *Prometeo*.

The overcoming of the idea of "concert" within the musical practice is parallel to that of a "built space" in architecture.

Then we can combine the «dramaturgy of sound» with the «third landscape», a concept expressed by the French architect Gilles Clément, and with the «aesthetics of the atmosphere» developed by the Spanish architects Diaz Moreno and Garcia Grinda during the same years.

In this paper, music analysis is involved at first. We will analyse some aspects of Nono's «dramaturgy of sound» as a basis for the development of a new concept of music performance. We will focus on some examples of sound spatialization and instrumental writing in Nono's works.

Another point of view concerns the sound perception in the performance space, conceived as an interaction between performer and listener. This is a constitutive element in Nono's music that implies the concept of a work in progress, never

accomplished, experienced by the performer, the composer and the listeners as *caminantes*.

To highlight all these connections we will analyse different fragments of Nono's works taken from *La lontananza nostalgica utopica futura*, for violin and tape and from *Prometeo*. Our analysis especially concerns sound spatialization and the interaction between performer and listener.

Finally, we will evaluate the similarities between the idea of «mobile sound» as expressed by Luigi Nono and the idea of the «third landscape» as expressed by the architect Gilles Clément in his main work *Manifesto of the third landscape*, published in 2004, and we'll compare them. Clément's «planetary garden» seems to us to be analogous to Nono's «mobile sound»: as the gardener observes, the musician listens. The musician is a listener of sounds before being a composer of musical forms. The gardener is an observer of the landscape before being an organiser of the space.

Within architecture we consider the concept of the aesthetics of the atmosphere, another point of view we can share with music. As well as music, architecture is therefore oriented, no longer to define predefined

shapes but toward a process that interacts with these various "naturals".

The concepts of dramaturgy of sound, mobile sound, digital garden, all developed in the '80s, have in common the idea of interaction and ongoing research. These are all the premises to the ideas of the actual multimedia works.

Selective bibliography:

L. Nono, *La lontananza nostalgica utopica futura*, per violino e 8 nastri, partitura, Milano, Ricordi, 1989

A.A.V.V. *La nostalgia del futuro. Scritti scelti di Luigi Nono*, a cura di A.I. De Benedictis e V. Rizzardi, il Saggiatore, Milano 2007

A.A.V.V. , *La nuova ricerca sull'opera di Luigi Nono* (Fondazione Cini, XX), a cura di G. Borio, G. Morelli e V. Rizzardi, Olschki, Firenze 1999 («Archivio Luigi Nono. Studi», I).

G. Clément, *Manifeste du tiers paysage*, ed. Sujet/objet, ed. It. *Manifesto del terzo paesaggio*, Macerata, Quodlibet, 2005
A.A.V.V. , *Breathable*, a cura di C. Diaz Moeno and E. Garcia Grinda, Madrid, 2009

Timbre as Vertical Process: Attempting a Perceptually Informed Functionality of Timbre

Anthony Tan

McGill University. Department of Music Research, Composition,
CIRMMT (Centre for Interdisciplinary Research in Music Media and Technology),
Hochschule für Musik Carl Maria von Weber Dresden

Anthony Tan is a Canadian composer based in Berlin, Germany. He has presented his music at IMATRONIC (ZKM), Sound and Music Computing Conference (Stockholm), the New York City Electroacoustic Music Festival, ICMC, Matrix, Voix-Nouvelles at Fondation Royaumont, Domain Forget, and Acanthes. Awards include a 2012 Stipendium from the Experimental Studio, the 2011 Giga-Hertz Förder Prize, and the International Competition for live-electronics of the Hamburg Klangwerkstage. Anthony is currently pursuing the Meisterklasse at the Hochschule für Musik Carl Maria von Weber Dresden with Mark Andre and Franz Martin Olbrisch. Additionally, he is a Ph.D. candidate at McGill University, Montréal where he studied with John Rea (composition) and Stephen McAdams (Psychoacoustics). He further studied mixed music with Philippe Leroux and the analysis of electroacoustic music with Robert Normandeau at the University of Montreal. Anthony draws upon past experiences as a DJ, studies in biological sciences, and eastern metaphysics as artistic influence.

Introduction

Within electroacoustic music studies, numerous methods to identify, describe and represent timbre structures have been explored. There lacks, however, a clear understanding of timbre's *functional* role within music. A functionality of timbre may refer to the compositional control of timbre in order to generate experiences of *tension*, the perception of which, serves as an important link between the recognition of *form-bearing dimensions* and subjective emotional response. This paper suggests a perceptually informed compositional model of timbre function. I aim to apply the psychoacoustic concepts of *spectral fusion* and *auditory scene analysis* to address functionality in electroacoustic music composition.

Structure versus Function

The classical timbre identification tool, Pierre Schaeffer's *Typology of Sound Objects* (Schaeffer, 1966), identifies *objet sonores*, based on their perceptual attributes, creating a *timbral solfeggio*. In addition, as the discourse around timbre utilizes no domain-specific adjectives, it "must be described in metaphor or by analogy to other senses," (Lerdahl, 1987). Thus, cross-domain approaches for the identification of

timbre structures are numerous (Zbikowski, 2002; Smalley, 1997; Godøy, 2006). Further, audio descriptors such as the *Spectral Centroid*, or *Spectral Flux* present perceptually based spectral classification tools.

These numerous identification methods reveal, however, little as to the functional relationships among timbre structures. Timbre can influence the perception of tension and relaxation, "and thus contribute to the expression inherent in musical form," (McAdams, 1999). To operate as a functional structure, timbre structures should be organized at various hierarchical levels. Fred Lerdahl explored this in, "Timbral Hierarchies" (1987), whereby "timbre prolongation structures" formed timbre structures with attributes similar to scale structures. Stéphane Roy (2003) attempted a functional analysis for electroacoustic music. Through an analysis at the *Neutral Level*, the listener's nominalization of segmented forms proposes a contextual and teleological approach to timbre function. Finally, embodied listening theories state that cognitive structures arise from sensorimotor patterns, whereby the body acts as a mediator between sonic impulses and cognitive patterns. Godøy (2006) utilized this idea with his concept of *Gestural Sound*

Objects. Finally, the *Unites Semiotiques Temporelles* (1996), presents various functional nominalizations that connect gestural movement to timbre morphology.

Proposition

The functional approach of timbre that I suggest adapts the psychoacoustic concepts of *Spectral Fusion* (McAdams, 1984), and *Auditory Scene Analysis* (Bregman, 1990) to timbre composition. It has been suggested that the perception of tension in music relies upon the cognitive computation of *auditory roughness* (Bigand, Parncutt, and Lerdahl, 1996). *Spectral fusion* causes acoustic information to be perceived as a single sounding object. *Auditory scene analysis* processes group acoustic information into streams after which *auditory roughness* is computed. Timbre qualities such as *harmonicity*, *onset-synchronicity* and *modulation congruency* affect the fusion of spectral components. Paraskeva and McAdams (1997) provided evidence that the segregation of timbral streams causes a lower perceived tension to occur as opposed to a single spectrally fused timbre. I will discuss the applications and implications of this hypothesis to a functional compositional model of timbre within electroacoustic music.

Application and Implications

Primarily, as this theory deals with the perceptual fusion or segregation of timbres, the *vertical* dimension of electroacoustic composition forms an increasingly important role. Here, attack synchronicity, timbre harmonicity, and modulation, affect spectral fusion and therefore perceived tension. As such, timbre becomes a process within the spectro-temporal dimension. Further,

spectral fusion or segregation adds another quality to the *objet-sonore*, whereby the fusion or segregation of a single sound object or multiple sound objects, affects the perceived tension. Finally, from an aesthetic point of view, this theory would suggest a model not necessarily specific to electroacoustic music, but rather presents a higher-order principle as it operates on the auditory system itself.

Selective bibliography:

Bregman, A., and Wright, J., (1987). "Auditory stream segregation and the control of dissonance in polyphonic music," *Contemporary Music Review*, 2:1, 63-92.

Krumhansl, C. L., (1989). "Why is musical timbre so hard to understand?". In S. Nielzén & O. Olsson (Eds.), *Structure and Perception of Electroacoustic Sound and Music*, pp. 43-53. Amsterdam: Excerpta Medica.

Lerdahl, F., (1987). "Timbral Hierarchies," *Contemporary Music Review*, 2:1, 135-160.

McAdams, S., (1999). "Perspectives on the Contribution of Timbre to Musical Structure," *Computer Music Journal*, 23:3, pp. 85-102.

Paraskeva, S. & McAdams, S., (1997). Influence of timbre, presence/absence of tonal hierarchy and musical training on the perception of tension/relaxation schemas of musical phrases. *Proceedings of the 1997 International Computer Music Conference, Thessaloniki*, San Francisco (International Computer Music Association), Berkeley, 438-441.

Touching the Audience

Luca Forcucci

Music, Technology and Innovation Research Centre

De Montfort University, Leicester (UK)

lucaforcucci.wordpress.com

Luca Forcucci's research observes the perceptive and dynamic properties/relations of sound and space, as components for music and art as experience. Forcucci is a PhD candidate in Music, Technology and Innovation at De Montfort University, UK, where he conducts research with Prof. Leigh Landy and Dr. John Richards. His work is presented on a regular basis around the world (such as Museum of Modern Art Paris, 30th Biennale of Sao Paulo, Rockbund Museum Shanghai, The Lab Gallery San Francisco, Akademie der Künste Berlin, Swiss Institute Rome or Swiss National Library) and is published by the Belgian label Subrosa. Forcucci 's has been nominated in the arts at World Technology Summit New York, and supported by grants like the Swiss Federal Office of Culture for research in the Brazilian Amazon Rainforest and at the Brain Mind Institute in Switzerland.

The paper investigates the idea of dynamic relations of sound and space perceived and experienced through the whole body as a sonic receptor and beyond the ears. Listening beyond the ears relies on Roland Barthes proposing the physiological faculty of hearing and the psychological act of listening. Case studies are investigated in relation to the perception of vibrational properties of sound in order to emphasise Barthes proposal. Therefore, the idea of *embodiment* of sound through *proprioception* is explored. Experience is key, since 'the idea that the world is literally a component of conscious experience may sound bizarre, but it has been proposed as a serious possibility.'

(Prinz in Robin and Aydede 2009: 423)

Moreover, the study introduces the idea of art and electroacoustic music being an experience for dynamic perception behaviours. Spatial representations and mental imageries are discussed to determine how sound perception can be augmented in order to develop dynamic multimodal experiences in electroacoustic contexts. How mental imageries can be observed? The methodology relies on observation through practice and qualitative data collection in answer to audience perception. In addition, relevant

artists, who created new forms of embodiment and experience, are observed. The neo-concretist artist Lygia Clark is paramount in regards to ideas about perception, embodiment and experience through her participative art. The composer Marianne Amacher defined a body of work directly relating to architecture (structure borne sound), which allows the audience to embody the sound through space. Furthermore, she used physiological properties, where the body is the sonic emitter and receptor. Whereas, Max Neuhaus' sound installations (term he defined), created situations between sound and space, in which the participants embody the works while walking or driving through them.

The paper starts with definition and contextualisation of terminologies of embodiment and proprioception through experience. Then, case studies are introduced in relation to those terms, and future opportunities for electroacoustic contexts are discussed.

Selective bibliography:

Robbins, P., Aydede, M., 2009, The Cambridge Handbook of Situated Cognition, New York: Cambridge University Press.

Conceptual strategies in forming electroacoustic sound identities

Georgia Kalodiki (PhD)

Born in Athens (1975) she has a Master and a PhD in composition from Goldsmiths College, University of London. She has also studied composition with Yannis Ioannidis, Joseph Papadatos and Alexandros Kalogeras, music for cinema and mixed media and classical guitar. She attended lectures and Master classes with well known composers such as Alvin Lucier, Christian Wolff, Rebecca Saunders, Bryan Ferneyhough. She is currently a PhD candidate at Ionio University of Corfu in Electroacoustic Composition with Theodor Lotis. Her works have been performed and received distinctions in Greece and abroad. She has received commissions from Boston University, University of Athens, Orchestra of colours, Acanthes 2007, Dissonart Ensemble etc. Her music has published from Subways Records. She has composed music for four silent movies in Kakogianni foundation. She's has also composed music for theater productions.

Publications : What taste is? (Polytonon Periodical, May-June 2007), Translation of acoustic perception into music experience (Polytonon Periodical May-June 2011), Postmodern revolution in art (Polytonon Periodical April-May 2012), Formal Analysis of Disintegrations by Tristan Murail, Composition Class Of Alexandros Kalogeras Workshop (June 2011), "Pictures of an exhibition" by M. Mussorgsky (Nakas conservatory, 1996)

Introduction-Subject

The ability to distinguish the referential meanings of instrumental inharmonic sounds as a perceptual mechanism is critical in the process of conceiving sound events and processes that form unique electroacoustic sound identities. This paper is a research study, concerning an effort to clarify the way that the composer's conception becomes perception for the listener through the performer's interaction with noise in the creation of electroacoustic sound identities using post-modern concepts like fragmentation and abstraction.

Discipline-Theoretical Background

Borrowing the term and techniques of fragmentation and dislocation from the postmodern philosophical approach, I try to redefine the relation between performer, computer and audience by breaking and de-centering already settled subjectivities. I use the concept of abstraction functionally, to delineate compositional processes, maintaining coherence by the subtraction of material through filtering not only spectrums but also fragments of sound objects. Thus sound material appears to be not omitted but purposefully absent. A creative process is analytically suggested, by connecting the ideas of fragmentation and abstraction in a productive way, as they both refer to the minimization of material, each one from a different point of view.

On the one hand, historically, fragmentation relies on techniques of infraction of the traditional linear approach in music, art and literature that while exploring the inner states of consciousness through disintegration after the

Modernity of 50's, at the same time works fine as an aesthetic mirror of aggression to the mass flux of information that we are experiencing now days. The concept of authentic-self is no longer present, living in a multi-dimensional world within constantly changing cultural contexts.

On the other hand, abstraction as a term is in the centre of discussion in electroacoustic music - being a mean of delocalize sound from its general source, - and results to the psychoacoustic deorientation of the listener from the process of recognition of a sound (acousmatic approach). According to Trevor Wishart 'The philosophy of composing which gradually emerged particularly from Schaeffer's writings, centred on the notion of the acousmatic and the abstraction of the sound-object from any dependent relationship to its origins'.¹

There is a whole new world of creativity that can arise through the emancipation from the conservative biased instrumental approach. When it comes to electroacoustic music, there are many advantages from taking the performers out of this old formalistic context and make them dissolve their 'instrumentalistic' sound identity. This idea goes far beyond 'abstract expressionism' where the sounds of the source are just not recognizable. I try to imply that there is nothing wrong with the recognition of the sound origins, - in this case the percussion instruments- but not with the conventional ones.

¹ Emerson, S. 1986 Wishart, T. Sound Symbols and Landscapes In S.Emmerson (ed.) The language of Electroacoustic Music, pp.43. Basingstoke: MacMillan Press

Methodology

As a starting point, a reorientation in listening priorities by abstracting material through the exclusive use of noisy spectrums played by the performer, redefines the instrument's identity. As John Young quotes: 'The concept of identity is significant in music since it is through delineation of sound identities that we can grasp the relationship between thematic elements and the processes used by the composer to develop and shape them'.² The spectral transformation of timbres is targeting to the amalgamation of the resulting sound identities, merging the outcome of the computer processing with the performer actions and vice versa, in a creative way. The above technique also minimizes the processing material, keeping the performer away from the conventionally 'secure' playing techniques and virtuosic clichés, in order to make him/her react and interact with the computer, in a direct and less predictably expressive way. The performer is no longer a virtuosic player but a sound vector. Fragmentation and discontinuity can be applied through rotating - often truncated though - functions by the constant use of recurring inharmonic timbral gestures exposed in a fragmented and continuously dislocated way.

Excluding the conventional sounds of instruments and depriving from the performer, the composer and the listener the benefit of identifying and splitting the action of playing the instrument from the action of sound processing, the greatest fusion of the roles of the performer and composer is achieved by the means of real-time sound transformation. What I suggest, is that the target may alternatively be, not to 'confuse' the listener concerning the origin of the sound source but to make him drastically broaden his/her origins of acoustic perception by abstracting conventional sounds and transforming only inharmonic sounds through extended playing techniques, using them as the exclusive material taken from the instrumental sound palette.

Results

Just like in post-modern thought where a person's sense of identity is a vague, 'decentered' collection of unconscious beliefs

mixed with memories and knowledge dissolving the person's mental substance through uncertainty, a real-time interactive music system can be used to rebuild the computer-performer relation in a way that the perceiver is forced to totally forget the traditional instrumental source reconstructing a whole new contextual approach concerning the act of instrumental playing.

The result is the construction of an abstract syntax of sounds by spectrally decomposing the inner possibilities of instruments to produce noisy and inharmonic spectrums and building a bridge of perception between abstracted gestures and the instrumental composition context. Despite the effort to disconnect the instrument from its conventional identity, it is always charming to discover that for the performer and the careful listener, there is often a sound implication left that can trace him back to the initial recognizable sound symbols. The degree of the presence of this vague connection is what defines and links the abstracted material with the instrumental sounds.

Selected Bibliography

Young, J. The Interaction of Sound identities in Electroacoustic Music, ICMC 2002 Proceedings. Gothenburg, 2002: 342–348.

Smalley, D. 1986 Spectromorphology and structuring processes. In S. Emmerson (ed.) The language of Electroacoustic Music, pp.61-93. Basingstoke: MacMillan Press

Emmerson, S. 1986 The relation of language to materials. In S. Emmerson (ed.) The language of Electroacoustic Music, pp.17-39. Basingstoke: MacMillan Press

Emmerson, S. ed., (2000) Music, Electronic Media and Culture. England: Ashgate
Wishart, T. 1994 Audible Design, Orpheus the Pantomime: Ltd.

² Young, J. The Interaction of Sound identities in Electroacoustic Music, ICMC 2002 Proceedings. Gothenburg, 2002: 343.

Sonic art for intersensory listening experience

Satoshi Morita
freelance sound artist – Unsleben
morita@sonicspacelabs.com
www.sonicspacelabs.com

Satoshi Morita's artistic focus lies on the use of sound for bodily listening, which evokes highly intimate experience for body and mind. His basic approach towards sound, space and object originates from his sculpture study and interest in the relationship between material, space and body. Since 2008, he has been developing sonic objects in which sound compositions can be relived through audio-haptic perception. His objects are mostly wearable and have direct contact with one's body. One of his works Klangkapsel/Sound Capsule received an Honorary Mention at the Ars Electronica in 2008 and presented worldwide, among others in eyebeam (NYC, USA), Science Gallery (Dublin, Ireland), The Mind Museum (Manila, Philippines), Touch Me Festival (Zagreb, Croatia). One of his compositions :: - / - / - ::. was released in the catalogue Three years in Nodar by Binaural - Associação Cultural de Nodar.

In recent years, the relationship between sound and the human body became a more important topic for musicians and artists. In total, there has been much artistic research dealing with intersensory perception between sound and image, but relatively little dealing with audio-haptic relationships in art and music. This paper attempts to provide a theoretical framework of audio-haptic experiences by examining work utilizing space, the somatosensory system, and electroacoustic music.

In the history of sound art the establishment of sound installation was an important epoch, which deals with the auditory space perception involving audience's active physical participation. Audience experiences the auditory constructed space in specific location having chance to react actively by walking in/around it. The audience's corporeal activity becomes an essential part of the whole experience of sound installation, however, the awareness of bodily perception appears rather as result of the required physical involvement for the spatial aural experience. The main issue remains to listen to the external space.

The clear focus on the bodily perception stimulated by sound was developed by works with intension to involve our somatosensory system. The differentiation between sound installation and the types of works, which involves audio-haptic perception, can be pointed

regarding the definition of the space. While sound installation deals with the external space, the latter concentrates on the inner space of the body. The "inner" space of the body can be defined as the sensorial space, which you can perceive through haptic. It involves medium (skin tissues, flesh and bones) and signal transmission in the nervous system. Vibrotactile stimuli cause mechanical deformations of the skin tissues and it is perceived by mechanoreceptors, which are located in different layers of skin tissues. Furthermore vibrotactile stimuli can be mediated through bone conduction directly to inner ear without exciting tympanic membrane and one can "hear" the vibro-tactile sonic signal.

Technically vibro-tactile stimuli can be generated by subwoofer and so called vibro-acoustic transducer. The tactile sonic wave generated by these two types of devices differs in its means of transmission: Subwoofer uses air borne sound transmission in low frequencies and transducer mediates sonic vibration directly to the body surface.

Electroacoustic composition plays a central role for the development of this type of artistic approach. Beside the fact that electroacoustic musicians (or collaboration with EA musician) have been developing it, methods of composing and playing EA music can be perfectly integrated to the creative process. Sonic wave covers in

nature not only audible range but also haptically perceptible frequency range. Sound generation method by electro acoustic music can contribute active and flexible control of the haptic signal, in particular vibrotactile stimuli in frequency and intensity.

Work examples “Sonic Bed” by Kaffee Mathews (2005), “STiMULiNE” by Lynn Pook/Julien Clauss (2003), and “Sound Capsule” by this paper’s author (2008) have different types of technical application in order to mediate the sonic wave, however, they all use electroacoustic music as their source material and core intention is to mediate the sound to the body.

The foundation of the sensory model, which appears characteristically at the works, is the relationship between auditory and haptic modalities. This interaction between auditory perception and haptic suggests a new ground of

musical space – the integration between imaginary (musical) space and physical (corporeal) space. Musical imagination, which is established through the long history of aural culture, coexists here with the corporeal awareness. Further application of this type of works, for instance for live performance of electroacoustic music, integration of the emotional response of the audience by means of psychophysiology and biofeedback, or compositional collaboration with electroacoustic musicians can extend the diversity of the audio-haptic sonic experience.

Selective bibliography:

2010 “Bodily Listening” / eContact! 13.3
Canadian Electroacoustic Community

Aesthetic Meaning of Mixed-Media and Intercultural Composition: *Water Music* (1960) by Tôru Takemitsu and Hisao Kanze

Makoto Mikawa

Ph.D. Candidate in Performance and Media Studies, Institut für Film-, Theater- und empirische Kulturwissenschaft at Johannes Gutenberg-Universität Mainz

Makoto Mikawa is currently a doctoral candidate of the International Postgraduate Program "Performance and Media Studies" at the Johannes Gutenberg Universität Mainz, Germany. He received his doctorate in Music from the University of Western Ontario, Canada, and his M.A. in Music Theory from the State University of New York at Buffalo. He worked at the University of Windsor, Canada, as a sessional instructor of Music Theory. His current research focuses on Noh-theatricalization of electroacoustic music in interdisciplinary and transcultural terms.

During the last century various composers attempted to integrate the "others" in the musical composition using different techniques. The "others" in this context were other genres of art as well as cultures foreign to the common practice of Western musical composition. With interdisciplinary and intercultural approaches to composition, electroacoustic music has played an important role in the development of new compositional forms and styles, as well as innovation in performance practice. As a consequence, a piece consisting of electronically produced music, a visual image, and a non-Western theatrical element, for instance, is no longer unusual, perplexing, or intrusive for the audience of our time. This may suggest that boundaries between different cultures as well as different disciplines of art have become blurred, particularly due to the advances in the information and communication technology, and their availability for personal use. However, it is a mere generalization, as these boundaries do exist, and the recognition and consideration of these now and then are a source of inspiration for composers and their collaborators.

A half-century ago in Japan, during the period in which the terms "mixed-media" and "interculturalism" were rarely used, the Japanese composer Tôru Takemitsu (1930-1996) and the outstanding Noh performer and theorist Hisao Kanze (1925-1978) undertook a collaborative project that aimed to create an original musical theater style by combining

electroacoustic music and Noh choreography. This mixed-media and intercultural piece was *Water Music* (1960), the first electroacoustic composition for a Noh performance or, in other words, the first Noh-theatricalization of electroacoustic music.

Instead of using sounds recorded in a Noh performance, for *Water Music* Takemitsu utilized almost only recorded sounds of water droplets. Some sounds in the piece retain the identity of water drops, due to a lesser degree of modification, i.e. "raw" use of the recorded sounds. In contrast, other sounds with a greater degree of modification have distinct sonic characteristics similar to those of *Tsuzumi*, a traditional Japanese percussion instrument used in the Noh performance. The sound structure as a whole is immune to the idea of sound density; on the contrary, it creates an impression of a non-metrical, quasi-pointillist form. The irregular occurrences of silence with irregular durations along with the oscillation of *Klangfarben* between the concrete and the abstract sounds generate unique musical tensions. For this idiosyncratic soundscape Kanze composed original Noh choreography. Excluding the literariness and emotional elements that were typical for traditional Noh play, his performance at the 1960 premiere demonstrated a high degree of clearness and purity, which resulted from his thorough interpretation of the music.

The concurrent presentations of the placidity of the tape music and the various movements of the

Noh choreography created a distinctive visual-sound space and the tension within. A further implication is that the musical-theatrical tension was derived also from the collision between different artistic disciplines as well as different cultural components. This particular collision, instead of the smooth integration, was the product of the aesthetic principle of Takemitsu and Kanze. This, however, also raises the question of what essentially the two artists' aesthetic was and why the new approach to theatricalization of electroacoustic music was necessary. Bearing this question in mind, this paper contextualizes the aesthetic spring head of *Water Music* in interdisciplinary and intercultural terms, rather than compositional-theoretical. The study seeks to explore how electroacoustic music, as a specific realm of postwar new music, affected the composer's and the Noh performer's conception of cultural identity in the context of the massive mixture of traditional and imported cultures in Japan.

Selective bibliography:

Burt, Peter. *The Music of Tôru Takemitsu*. Cambridge: Cambridge University Press, 2001.

Loubet, Emmanuelle. "The Beginnings of Electronic Music in Japan, with a Focus on the NHK Studio: The 1950s and 1960s." *Computer Music Journal* 21/4 (1997).

Ôoka, Shôhei. "Taiwa: Takemitsu Tôru + Ôoka Shôhei: Mizu, Ongaku, Kotoba [Dialogue: Tôru Takemitsu + Shôhei Ôoka: Water, Music, Word]." In *Ôoka Shôhei Ongaku-Hyôronshû*. Tokyo: Shin'ya-sôshosha, 1989.

Takemitsu, Tôru. *Takemitsu Toru Zenshû 5*. Edited by the Complete Takemitsu Edition Team. Tokyo: Shôgakukan, 2004.

Watanabe, Moriaki. "Gendai-Ongaku to Noh [Modern Music and Noh]." In *Yûgen: Kanze Hisao no Sekai*. Tokyo: Libro Port, 1980.

Listening Analysis of Takemitsu's "Water Music"

Yuriko Hase Kojima
Shobi University

Yuriko Hase Kojima is a Professor of composition at Shobi University in Saitama, Japan. Completing her studies in piano at a Osaka College of Music, she pursued further studies in the US for ten years in 1990s. With numerous honors and awards, she obtained the B.M. in composition from the Boston Conservatory, the M.M. and the D.M.A. from Columbia University, where she studied with Tristan Murail, Jonathan Kramer, Fred Lerdahl, and Brad Garton. A serious composer, her works are presented at various International festivals and conferences such as the ISCM and the ICMC. Her theoretical studies extend from traditional Classical music to contemporary music, analyzing the works from all era of the history of music such as Bach, Beethoven, Schoenberg, Messiaen, Grisey, Murail, and Japanese composers. In this paper, she tries to analyze Takemitsu's monumental piece called "Water Music" for three flutes and tape.

In 1960, Takemitsu composed a unique piece of music for 2 flutes, 1 alto flute, tape, and Noh Dance. The piece "Water Music" has been considered to be one of the earliest and the most important tape pieces by Japanese composers. The sound materials of the tape part are entirely created from recorded sounds of water drops. It was premiered at the Sogetsu Kaikan Hall in Tokyo on April 28th of the same year of creation. It was later presented in Paris on October 28th, 1971 during "Semaines Musicales Internationales de Paris" at Musée Guimet. The piece was once again performed in Japan in public at the Tokyo Opera City Concert Hall on June 9th in 2004 as a part of the program for the last concert of the All Takemitsu Chamber Music Concert Series named "Resonant Sea."

Since the score is not published, occasionally the tape-alone version is regarded as "Water Music." However, each version provides us with totally different experience. It means that the tape part with electronically manipulated water sounds could be heard as one separated piece of electronic music by itself, but once it is embedded in the sound of instruments, uniquely with Noh Dance in this case in original production, the tape part could be heard completely different way in different context. Here raises a question: can listeners approach different meanings when the same music is presented in different form of performance?

The ensemble version begins with solo alto flute part played more than 1 minute. This solo is smoothly connected to the tape part around 1'17". The beginning of the tape part consists of distinctively pitched attacks of the sounds of water drops that may give a listener a grasp of the pitched phrases that could be regarded a motive of the piece. Interestingly, as we proceed listening, we notice the resemblance of the sound of water drops to the traditional Japanese percussion instruments. Especially when it is played with flutes, whole ensemble including the tape music sounds just like the music of Noh Theatre. Although the piece was conceived at the commission by legendary Noh dancer Hisao Kanze, Takemitsu says that he did not have intention to compose this tape part imitating musical manner after any traditional instrument. On the contrary, he tried to compose with his artistic idea being as far as possible from the musical tradition of Noh Theater. Unintentionally, however, Takemitsu's treatment of the music for the tape part has come close to the elements of Japanese traditional music with its characteristics of tones and rhythms. Takemitsu might have been conceptually influenced by the artistic surroundings of Noh Theater settings.

In this research, the author has tried to musically analyze its ensemble version by listening with traditional analytical approach. The recording from the 2004 performance is used for this research. The thesis is mainly

based on the listening analysis by solfège by the author determining unclear pitches and rhythms. The traditional analytical knowledges and methodologies are fully employed to identify groupings of pitched materials and repeated phrases or rhythmic patterns. This approach hopefully could lead to finding of the relationships and meanings of the musical events between the electronic sounds and instrumental sounds.

Selective Bibliography:

Kojima, Yuriko Hase. *Meaning of Creation of Tape Music: Listening to the Sound of Water*, EMS 2012 Stockholm, 2012.

Takemitsu, Toru. *Ongaku no Yohaku kara* (from Blank Space of Music), Shincho-sha, Tokyo 1980.

Takemitsu, Toru. *Oto, Chinmoku to hakariaeru hodon* (Confronting Silence), Shincho-sha, Tokyo 1971.

Takemitsu, Toru and Junzo Kawada. *Oto, Kotoba, Ningen* (Sound, Word, Human), Iwanami-shoten, Tokyo, 1992.

Sound Arts, Sound Performance and Sonic Arts ---alternative presence of Japanese electroacoustic music

Mikako Mizuno
Nagoya City University, Japan
mikakom@sda.nagoya-cu.ac.jp

Composer and musicologist. The pieces were premiered in France, Austria, Hungary, Germany, Italy, Republic of Moldova, ISEA2000 and 2002, ISCM2003 and 2010, EMS2010 Changhai, Musicacoustica2010 (Beijing), ACMP2011, 2012, 2013, WOCMAT2013 and in Japan. Japan premiers include the concerts of GEN-ON, JFC and JSEM. The orchestral works were premiered by Tokyo Philharmonic Orchestra, Central Aichi Symphonic Orchestra, Aichi Symphonietta. Ten sound signs are daily used for the public metro stations of Nagoya city. Participated and organized the Asian Network Concert since 2011. Main writings; Reception of Schaeffer in Japan—by composers, musicologists and scientist(2012), Individuality and collectivity in solfège sonore of GRM(2009), The History of Japanese Contemporary Music After WW II(2006), Tekkhokan—the aesthetic concept and the technology(2000) and so on. Professor of Nagoya City University, Vice President of Japanese Society of Electronic Music (JSEM). Committee member of Japanese Society of Sonic Arts (JSSA).

1. Introduction

The JAPANESE live electronic or JAPANESE style of algorithmic composition struggled for new forms of expression and presentation and created the alternative styles. The terms <live electronic> and <algorithmic composition> originated euro-american electroacoustic music but the Japanese artists like Group Ongaku or Method Machine modified the concepts and created their unique styles.

Starting with the general definition of sound arts by Helga de la Motte-Haber, which would be applied to the survey of Japanese sound arts from Group Ongaku to Zombie Music, I will focus two points; the terminology of <live-electronic> which was connected to the space concept in Group Ongaku, and <media> as an aesthetic phase of music in the discipline of Method Machine.

2. General definition of sound arts at the end of twentieth century

Helga de la Motte-Haber admitted in 1999 that the piece like Steve Reich's Pendulum Music (1968) had exceeded the limitation of music as art genre and that the artists of fine arts invaded into music as sound creation. And *Klangkunst* was referred as <toning objects> and <sounding spaces> by him. Depending on the framework of

de la Motte-Haber, I discuss the terminology of the genres and the media as method.

First, I discuss about the works as well as the aesthetic statements of Akiso Suzuki, Takehisa Kosugi, Yasunao Tone, Yukio Fujimoto who had started their artistic career in 1960's. As the direct roots of them, I discuss Group Ongaku.

The second point concerns <media> as transmitting system for the artists to have social communication. This framework suited to the key points of Method Machine manifesto, which was announced through internet on the New Year's day of 2000. The pieces by Masahiro Miwa are deduced from the algorithmic composition, which were very unique in the point that the algorithm simulates the algorithm itself.

3. <Live electronic> and <space> in Group Ongaku

<Group Ongaku> repeated improvisational performances in small rooms of Tokyo University of Arts or of Tokyo University before their first public concert in Sogetsu Kaikan(1961). Their improvisation has been succeeded to Taji Mahar Travelers, founded in 1968. According to Minao Shibata, the members played (or used) violin, harmonica, base, vibraphone, santool and other ethnic instruments, Japanese traditional instruments and

some gajets. The interplay between the performers' narrative process and the spirit of the audience was occurring in a common <space>.

The musicologist Koji Sano wrote in the article <Wave Music> in *TranSonic* No6, 1975, that the Japanese live-electronics in 1970's were composed and performed with electronics and their identity was in their spatial concept, which is not constructed on the time line. The concert held in Sogetsu Kaikan in Tokyo in 1961 by Group Ongaku with the title <Improvisation and *objets sonores*> will show their essence.

4. <Media> for music in Method Machine

Masahiro Miwa, a founder of Method Machine and prize winner of golden nica in *Ars Electronica*, made the audience do some physical training based on his minute indications. The purpose of physical training is to realize the virtual story with the real human body. This method had already been presented in <Ordering a Pizza de Brothers> by Formant Brothers originated in 2003. Ordering a pizza as a fictional story evaluates the artificial voice created by their original formant synthesis. Even

though the fictional purpose is not achieved, the performance is evaluated in the other dimension than the fictional goal. Zombie music by Taro Yasuno realizes a new type of communication through sound performance not with human body but with his automata and video.

Selective bibliography:

Klangkunst, hrsg. Helga de la Motte-Haber, Bremen, Laaber-Verlag, 1999.

The History of Japanese Contemporary Music after WW II vol1./2, Tokyo, Heibon Sha, 2006/2007,

tranSonic No.5, Tokyo, Zen-on Gakufu pub. , 1975.

Ongaku Geijutsu Vol. 19-12, Tokyo, Ongaku no Tomo Sha, 1961.

The Feeling Blend: An Extension of Blend Theory For Feeling and Emotion in Electroacoustic Music

Gary Kendall
Stockholm, Sweden
garyskendall@me.com

Gary Kendall is an independent composer and author residing in Stockholm, Sweden. From 2008 to 2012 he was a Lecturer at the Sonic Arts Research Center at Queen's University in Belfast, Northern Ireland. Before that he was Associate Professor of Music Technology at Northwestern University where he served both as Coordinator of the Music Technology Program and Co-Director of the Program in Sound Design. His electroacoustic compositions and sound installations have been presented at SMC, SEAMUS, the Spark Festival, ICMC, the AIMaako'11 and the Florida Electroacoustic Music Festival, as well as on numerous campuses. As an author, especially in spatial audio and electroacoustic music analysis, he has contributed to Organised Sound, the Computer Music Journal and Proceedings of the ICMC. He has presented research at the Electroacoustic Music Studies Conference, ICMC, SEAMUS, the Audio Engineering Society and the Acoustical Society of America.

Starting from the assumption that meaning in electroacoustic music is an outcome of the listener's mental processes, it is the goal of this presentation to examine the mental processes whereby feeling and emotion contribute to meaning when listening to electroacoustic music. In order to account for the nuanced and multileveled sense of meaning that emerges in electroacoustic music, we will introduce the concept of the *feeling blend*, an extension of blend theory as presented by Fauconnier and Turner (2002). This consideration of feeling and emotion begins by reviewing antecedent theories of emotional blending (Pluthik 1980; Deacon 2006) and the blending of phenomenal qualities as aspects of everyday experience. Also considered are theories of emotion and assessment and their corollaries in musical anticipation. And as with all human endeavors, the listener's mental activity takes place in numerous simultaneous layers that are largely unobservable. Making these layers explicit is important to addressing the multi-layer nature of how feelings become blended. A model of five mental layers (introduced at EMS2012) provides a simple

framework for unpacking mental activity (Brandt 2006). These layers are identified as: Gist, Sensations, Locus, Contexts and Domains.

Investigating the feeling blend in the context of electroacoustic music listening forces a reconsideration of core issues in blend theory, such as what constitutes a mental space and what triggers a blend. These issues are examined in the light of practical examples from the electroacoustic literature that illustrate the importance of mental layers in differentiating mental spaces and blend triggers. For example, a blend may be triggered at the level of Gist when an auditory event invokes multiple object-event schemas. An example is the blending of church bells and a boy soprano in Jonathan Harvey's *Mortuos Plango, Vivos Voco*, where by the magic of digital signal processing, the auditory attributes of the two sources are mixed in various combinations. What forces the blend is the singularity of the resulting auditory event. A contrasting example can be found in Francis Dhomont's *Novars*. In this excerpt, two distinct auditory streams provide no basis for blending at the

level of Gist, but the stasis of the passage provides no possible resolution other than to seek a feeling blend at the level of Contexts. These examples also reinforce Deacon insights into the centrality of tension in such blends. An important feature of Koestler's bisociation theory lauded by Deacon (2006) is how it provides a framework for the temporal evolution of aesthetic experience leading to resolution. Deacon believes that conflicting emotions can be held simultaneously and blended to create emergent emotions that can lead to catharsis. In electroacoustic music, there are dynamic frameworks operating at multiple levels, many of which contain an element of release or resolution such as image schemas and event schemas. Essential to all these is their reliance on embodied knowledge of tension and release. Practical musical examples illustrate how the sense of resolution or catharsis of feeling blends can be triggered at specific mental levels. This provides an important lesson in how the materials of the artistic work shape the evolving structure of

the feeling blend. In conclusion, the feeling blend is proposed as an essential concept to understanding artistic experience and an intrinsic aspect of being human.

Selective Bibliography:

Brandt, P. A. 2006. Form and Meaning in Art. In M. Turner (ed.), *The Artful Mind: Cognitive Science and the Riddle of Human Creativity*. Oxford: Oxford University Press.

Deacon, T. 2006. *The Aesthetic Faculty*. In: Turner, M. (ed.) *The Artful Mind: Cognitive Science and the Riddle of Human Creativity*. Oxford: Oxford University Press.

Fauconnier, G. and Turner, M. 2002. *The Way We Think: Conceptual Blending and the Mind's Hidden Complexities*. New York: Basic Books.

Plutchik, R. 1980. *Emotion: A Psychoevolutionary Synthesis*. New York: Harper and Row.

Between the stage and the gallery: objects and spaces in three works by Canadian sound artists

Terri Hron

Université de Montréal

The Centre for Interdisciplinary for Research Media and Technology (CIRMMT)

Terri Hron performs and creates music in a wide range of settings, often in collaboration with others. Current projects include: NESTING, a performance integrating musical, visual and embodied practices; Beta Lyræ, where she and Cléo Palacio-Quintin network their own and others' music into performances on augmented flutes; and Portrait Collection, in which Terri curates a band of unique performer-composers working with technology. She is currently finishing her doctorate in composition at the Université de Montréal, researching collaborative practices in the creation of music for instruments and electronics, focusing on the composer's perspective on the idiom of specific performers. She gives courses in creation and technology at the Université de Montréal, and masterclasses in a wide variety of settings. She has been the thankful recipient of numerous artist residencies, awards, grants and scholarships.

Physical objects as sounding bodies are found on the concert stage as instruments and in the art gallery as exhibition pieces, and all along the conceptual, performative and perceptual spectrum between the two. This paper presentation explores three Canadian artists whose work intercepts with electroacoustic music and who place themselves, the audience and the sounding object(s) at various positions between the stage and the gallery on the performance/reception continuum. Jean-François Laporte's invention and performance of the *TuYo* instruments represents the sounding object as instrument, manipulated by an expert performer onstage. This seemingly straightforward use of the sounding physical object is quickly subverted by the fantastical nature of the invention, which combines electronic, robotic and physical means to generate its sound, and whose performance is not always contingent on the presence of a performer. Nicolas Bernier has a laboratory-style setup for his work *frequencies (a)*, in which the performer interacts with an array of tuning forks activated by computer-controlled solenoids. The accuracy possible in the

performer/composer's real-time interaction with the object array contrasts with the exactitude of sequences and mechanisms programmed in advance, encouraging questions on the performer's function, his relationship with the object and the nature of performance in this context. Finally, Janet Cardiff and George Bures Miller's *The Cabinet of Curiousness* invites the audience to take the role of DJ, interacting with the object as it might an eccentric jukebox inside the reverential space of the art gallery. This ostensibly commonplace object nevertheless invites a questioning on the nature of musical instruments, the artists' – and our – relationship with things, as well as what performativity might mean outside of the concert hall ritual.

The diversity of positions represented by these works sheds different shades of light on a number of relationships, three of which we will discuss: object/sound, object/performativity, and object/work. To illustrate: is the object/sound relationship on an acoustic level, as in the case of most traditional musical instruments, whose desired sonic capacity largely determines physical design? Is it of a more conceptual

or aesthetic nature? Or perhaps, in between? In terms of performativity, can we speak of expertise, and if so, how is this determined? Can the object be performed by others, by anyone? How does the audience perceive this performance capacity? Can others compose for the object as for an instrument? This leads nicely into the object's relationship to the work itself: does it reside in the performance of the object, in the object's deployment within the context of another work, or is the object itself the work?

Possible answers are based on discussions and readings around the three artists/works. These more personal statements and positions are set against Baudrillard's "Tout objet a ainsi deux fonctions : l'une qui est d'être pratiqué, l'autre qui est d'être possédé... /Every object thus has two functions: one is to be put to use/practiced, the other to be possessed," where earlier he tells us: "La possession n'est jamais celle d'un ustensile, car celui-ci me renvoie au monde, c'est toujours celle de l'objet

abstrait de sa fonction et devenu relatif au sujet [sic]. /Possession is not always that of a utensil, which refers back to the world, but always that of an object *abstracted from its function and thus brought into relationship with the subject.*" (Baudrillard 1968: 104). Function, relationship, subject and object in the space between stage and gallery are thus keywords for this presentation highlighting three Canadian artists actively working in sound.

Selective bibliography:

Baudrillard, Jean. *Le Système des objets ...* Paris,: Gallimard, 1968.

Bernier, Nicolas. *frequencies (a)*. Sound and light performance. 2012.

Cardiff, Janet & George Bures Miller. *The Cabinet of Curiousness*. Sound installation. 2010.

Laporte, Jean-Francois. *Tu-Yo*. Musical instrument. Ongoing.

Hearing Space

Elen Flügge
Bard College / UdK

Elen Flügge (1986) is a writer and sound artist. Having studied philosophy at Bard College, NY and auditory culture at Sound Studies (UdK) in Berlin she is currently preparing for a dissertation on urban sound environment with Sabine Sanio. With a focus on audio-media culture and personal sound space, her work oscillates between theory and material installation.

Electroacoustic music and its audiences profit from a break with concert tradition. Composers are granted creative expression beyond conventional parameters of place, time and cultural habit. Audiences are provided astounding new musical experiences. However complications arise for musicologists in regard to how the works can be aesthetically and critically approached, particularly in regard to the role of the audience and use of space and place as musical parameters.

In the case of site-specific and real-time works, what remains when the moment is over and site inaccessible? When neither score nor recording can be considered adequate instantiations of a work, what documentary materials serve best as an object of a future musicological research?

Through a case study of the piece *urban space-urban sound*, this paper seeks a critical-musicological approach to works characterized by specificity of listening space, manipulation of live sound, and dramaturgic positioning of audience. *Urban space-urban sound* was realized by artists O+A (Bruce Odland, Sam Auinger) and Hannes Strobl and curated by Carsten Seiffarth, for the opening of the Acht Brücken Festival in 2013. The piece

occupied a two-station stretch of underground train tunnel in central Cologne. Using prepared recordings, real-time audio feeds through resonating tubes as well as live electroacoustic performance, the piece aesthetically recontextualized a connective transitory space normally defined by its nodal function in an urban infrastructure. Groups of visitors were walked through the architecture in a multimodal subterranean dramaturgy.

As a tuning to urban architecture, the piece interwove the acoustics, identity and atmosphere of the site, transforming the space into musical material. Such pieces intimate the potential of musical works (once released from the concert hall's confines) to be exploratory tools, playing with city structure and habits of (in)attention to the urban environment; to rephrase physical and social spaces.

Investigating this work underlines difficulties presented by situated and generative music, in particular representability and reproducibility. The concert framework allows an accepted repetition of the same work by pairing notation with a standardized setting, but the nature of many contemporary works make transplanted performances at best highly

problematic, and notational documentation insufficient.

In method this case study turns to the available 'remains' of *urban space-urban sound*, including visual and audio documentary materials, technical and structural specifications, interviews with composer and first hand receptive account. The utility of these materials are themselves under evaluation, as each provides incomplete representation, biasing later understanding of the piece (or any resurrection attempt) in different ways.

Factors to account for include the change of historical place, cultural space and sound environment over time, shifting use of

technologies and rapidly obsolete media, as well as the role of particular individuals (e.g. live performing artist, participating listener) in completing the work as a whole.

In the attempt to articulate space and listener placement as musical parameters it leans on theoretical discussions, primarily addressing sound art, by musicologists (including Helga de la Motte-Haber) and artist-theorists (such as Georg Klein, Brandon LaBelle). Further conceptual approaches (e.g. by Leigh Landy, Salomé Voegelin) support a consideration of listening perspective as important for critical understanding of works 'beyond concert performance'.

The origins of sound installation: case study Turin

Giacomo Albert
Università degli Studi di Torino

Giacomo Albert gained in December 2011 his Ph.D in Musicology at the University of Pavia with a dissertation on sound in Nam June Paik and Bill Viola's works. In 2007 graduated in Musicology with a thesis on the relationships among technology and compositional thought in Marco Stroppa's music. He graduated also in electroacoustic music at the Conservatorio di Cuneo. After the Ph.D he won a Fellowship by Paul Sacher Stiftung in order to study Ferneyhough's computer aided compositional tools and their influence on his compositional techniques ; from University of Turin, in the frame of 3Script, i.e. the creation of a digital ontology of performance ; and from Fondazione Giorgio Cini, for a philological analysis of Giacomo Manzoni's multimedia opera Atomtod. His publications are mainly in the fields of sound art, sound installation, film music and audiovision, hollywood mainstream and video art.

Tracing the origins of a loosely defined *genre* as “sound installation” is a problematic task: an oxymoronic expression, which brings together an already loosely defined multimedia art form, and a media specification. Sound installation is a *genre*, which has uncertain boundaries. Nonetheless, musicologists keep on trying to trace the *genre*'s roots. Indeed, even if sound installation could not be called a well-defined *genre*, it represents a significant historiographical aesthetic issue. A word, around which many important aesthetic questions met and still meet.

I will focus my attention on a geographically defined case study: the city and the surroundings of Turin, from about 1956 to 1975. Turin's case study is interesting, because in 1957 there had already been an important experience: Walter Olmo's theory for an “ambient music”, and his art exhibition sonifications.

I will focus my attention on three works, paradigmatic examples of the three most important artists which dealt with sound installation, or sound in installation, in Turin during this time lapse. Firstly, I will introduce Pinot Gallizio's *La Caverna dell'Antimateria* (1957-1959), an installation artwork, for which Gege Cocito built the *Thereminofono*, that is, a huge theremin hidden behind the painted walls, whose pitch

and amplitude were affected by the movement of the spectators. Secondly, I will analyse Enore Zaffiri's *Q/64*, an electroacoustic music piece composed in 1966-1967, played in a continuous loop during the exhibition *Operazioni plastiche spaziolucecolore*: its structure mirrored both the quadratic shapes depicted in Sandro De Alexandris' paintings which hung on the walls and from the ceiling, and the structure of the architectonic set-up created by Leonardo Mosso by means of semitransparent paper sheets, as well as the basic shape of the “concret” specialised poem, created for the occasion by Arrigo Lora Torino. In the end, I will briefly introduce some Piero Fogliati's sound sculptures, that is, *Liquimofono*, *Latomie* and *Anemofono*, all designed in 1968 for the unrealized project of an *Auditorium a rumore*, a hall of noises.

I will introduce a compared analysis of the three works. All of them find new ways towards the redefinition of the relationship among sound, space and spectator, and all of them stem from art-environment aesthetic impulses. Anyway, I will underline their differences/oppositions within numerous domains: in the way they conceive the relationship between media, between sound and space, between work and

environment/context, between work and spectator, and so on.

Turin has certainly not been the main developing centre of the *genre*. Therefore, I will adopt the historiographical methodology known as the “criterion of the peripheral areas”, highlighting the reception of outer aesthetic impulse, examining the aesthetic influences and the compound net among arts and electroacoustic sound in Turin, where the genre gradually arose.

Thereafter, I will present a systematic view of the Italian history of sound installation art, illustrating the main peculiarities and personalities of the leading centres, as Milano, Firenze, Palermo, Roma and Padova, and their reciprocal relationships.

Selective bibliography:

Giacomo Albert, Rapporti tra opera e fruitore nelle origini dell'installazione sonora (1900-1966), in «ACT – Zeitschrift für Musik und Performance», Vol. 4, Ars

Acustica, Sarah Mauksch and Wolf-Dieter Ernst [eds.], < <http://www.act.uni-bayreuth.de/de/index.html> >, FIMT, pp. 1-21.

Giorgina Bertolino, Francesca Comisso, Maria Teresa Roberto, Pinot Gallizio. Il laboratorio della scrittura, Milano: Charta, 2005.

Klangkunst: tönende Objekte und klingende Räume, «Handbuch der Musik im 20. Jahrhundert», Vol. 12, Helga de La Motte Haber [ed.], Laaber: Laaber Verlag, 1999.

Enore Zaffiri. Saggi e materiali, Andrea Valle, Stefano Bassanese [eds.], forthcoming, prev. june 2014.

Volker Straebel, Zur frühen Geschichte und Typologie der Klanginstallation, in «Klangkunst», Musik-Konzepte Sonderband, Vol. XI, Ullrich Tadday [ed.], München: musik-texte, 2008, pp. 24-47.

Donatoni: a critical re-appraisal of Quartetto III

Massimo Avantaggiato
Conservatorio G. Verdi - Milano

He holds a degree in Sound Technology with full marks at “Giuseppe Verdi” Conservatoire in Milan and a degree as a Sound Engineer.

Meanwhile, he is deepening his composition studies through the experimental composition course at G. Verdi Conservatoire in Milan.

He has taught since 2010 for IES ABROAD/Università Cattolica.

Interested in programming languages applied to audio and video, he has recently participated in:

- “Music & Screen Media Conference 2014”, Liverpool;
- “Music and/as Process Conference 2014”, Canterbury;
- “Slingshot Festival 2014”, Athens, Georgia, USA;
- “ICMPC2014”, South Korea;
- “FAS 2013”, Costa Rica;
- “Premio Nazionale Arti”, Avellino, 2013;
- “EMU International Acosumatic Music Festival”, Rome, 2013;
- “Di Stanze”, Catania, 2012;
- “Segnali”, Perugia, 2012;
- “IFIMPAC”, Leeds, 2011;

“CSound Music Conference 2011”, Hannover.

This paper provides an analysis of Quartetto III, composed by the Italian musician Franco Donatoni.

It is Donatoni's third Quartet: unlike the other quartets, it was produced, under the guide of Marino Zuccheri, at the “Studio di Fonologia” in Milan, by using only electronic instruments.

We've studied the historical, musical, and technological context in which this work was conceived by using different historical sources such as texts for broadcasting, documents, letters from the archives of the “Studio di Fonologia” as well as notes and documents preserved at Paul Sacher Stiftung.

These documents offer an interesting perspective into historical analyses, considering that the Studio di Fonologia musicale of Radiotelevisione Italiana, like similar studios in Europe and America, was the result of a meeting of music and new opportunities of analysis and treatment of sound.

This paper also highlights some specific ideas of Quartetto III, the composer's

originality and importance not only in his work, but also in the production of the “Studio di Fonologia” and in the history of electroacoustic music.

In the 1950s, while Boulez, Stockhausen and Berio were investigating electronic music and total serialism, Donatoni was writing under some strong influence by Bartok and Petrassi.

In 1953 Donatoni met Bruno Maderna, that introduced him to Webern's music and the European avant-garde. Donatoni and Maderna will be two of the composers that will work at the Studio di Fonologia in Milan during the '60s.

We have analyzed Quartetto III under different points of view, by using stereophonic and quadraphonic versions of this work - recording “E018” and “Q002” respectively.

In particular, we have pointed out the relationship between ministructure and macroform, underlining the progressive aggregation process, from “elements” to “Groups” and “Columns”. This objective has been achieved by means of:

a) a partial Genetic Analysis by using PWGL;

b) a Listening Analysis, by following different musicological approaches: Chion and Delalande; Smalley and the spectromorphology; Roy Functional Analysis; Temporal Semiotic Unit (M.I.M.); Sloboda, McAdams; Perceptive and cognitive Studies. This approach can give us some information about the macrostructure: Quartetto III, that lasts about 5 minutes, is structured in panels which are sections with different metronomes, but with an internal coherence of articulation and musical development.

Much attention has been paid to the structural and poetical use of quadraphonic space: Quartetto III seems to pave the way for the later electroacoustic works because of the use of spatial figures and “structured” electronic gestures.

Even if Donatoni declared *“My distance from Stockhausen, despite my admiration, is that he is always perfecting his ego and his music, while I want to destroy both of them”*. we believe there are many similarities between Donatoni's work and Stockhausen's early electronic pieces: their works are both characterized by assent to structuralism, the recurrence of certain numbers in formal subdivision, in the use of dynamics and in other musical parameters.

In this paper we also point out the similarities between Donatoni's work and

other works produced at Studio di Fonologia in Milan during the Sixties: *Recitativo* by Camillo Togni, *Divertimento* by Niccolò Castiglioni, *Serenata III* by Bruno Maderna. These similarities underline an aesthetical common orientation.

The historical recalling of the 60s, when Quartetto III was conceived at the Studio di Fonologia, has shown the very high level of the Italian research carried out at the Studio.

Selective bibliography:

AA.VV. “Lo Studio di Fonologia: un diario musicale 1954-1983”, a cura di Maria Maddalena Novati, BMG Ricordi, 2009;

Enzo CRESTI, “Studio monografico sulla musica e la poetica di Franco Donatoni in relazione alle problematiche filosofiche e musicali dagli anni '50 ad oggi”, Suvini Zerboni, 1982.

Franco DONATONI, “Questo”, Adelphi, 1970

Franco DONATONI, “La musica elettronica”, in “Discoteca”, n°14, 1961;

Franco DONATONI, “La musica e l'io: un'ipotesi sulle possibilità di autodidassi mediante adozione delle funzioni introiettive quale metodo di comporre”, unpublished work.

New dimensions of musical enjoyment. The Analysis problem: Luc Ferrari through the *Aesthetic-Cognitive Method*

Alba Francesca Battista
Conservatorio « U. Giordano » - Foggia, Italy
Conservatorio « D. Cimarosa » - Avellino, Italy

Alba F. Battista (1987) graduated in *Musica Elettronica* with the highest possible marks at “D. Cimarosa” Conservatoire of Avellino (Italy) with M° Damiano Meacci. Her compositions and papers are selected for many international contests (xCoAx 2013 Bergamo ITALY, ICMC 2013 Perth AUSTRALIA, Biennale di Venezia 2013 Venice ITALY, STUDIO 300 Festival 2013 Kentucky USA, MuseRuole 2013 – Women in Experimental Music Bolzano ITALY, SBCM 2013 Brasilia BRAZIL...). She graduated in Piano and in Physics, specialized in Acoustic and Nanotechnologies. She is the author of *Elementi di Acustica Fisica e sistemi di diffusione sonora* (2012) and *Elettrotecnica ed elettronica. I nuovi strumenti che hanno rivoluzionato l'estetica della musica* (2014). She works as “Electroacoustic Composition” Professor for the Master Degree in Electroacoustic Music at “U. Giordano” Conservatoire of Foggia (Italy) and as “Electronics” Professor for the Master Degree in Sound Engineering at “D. Cimarosa” Conservatoire.

Electroacoustic music has led to profound reflections on sound nature, timbre and music systems. The new dimensions of musical enjoyment have meant that it is necessary the creation of new fields, very close to the musical aesthetics, enhanced by reflection on certain aspects of the composition of the last few decades.

According to Enrico Fubini, musical culture and new models of sound perception induced by massive social phenomena, such as enlargement of listening, music spread of education, the diffusion of increasingly sophisticated means for sound reproduction that could be available to everyone, everything could not have been without influence in the development of new lines and new ways of thinking.

If the avant-garde experience was decisive in recent decades for musical thought, other areas of musicological studies have therefore played an important role. The widening of the horizon of historical studies to other civilizations and epochs far removed from ours, refinement of the instruments of investigation and research, the improvement of new methods of historical study from the

late nineteenth century onwards, created strong stress to the growth of theories on the *analysis of music*.

Musical analysis is a very vague concept that refers to any methodology to analyse a piece of music.

Obviously, any analytic theory is faced with the problem of privileging the size of the work that is considered more important than others. However, every choice involves exclusions for which each analytical approach inevitably highlights an aspect at the expense of others and the risk of never being able to grasp what you would like to take a *utopian*, ie the totality of the work.

Analysis should not be a mere speculative instrument or a tool for the theoretical conceptualization of music. When we apply it to the topology of becoming and of the transformation of musical forms, it can be a profound contribution to the creative process.

Nevertheless, the analyst must take care to place the examined work in an evolutionary history of the composer. This perspective is the one of *his* poetic. Analysis, as well as

music itself, makes sense when celebrates a permanent dialogue between ear and mind, between perception and sense of sound.

It is necessary to say that developing a relationship of interdependence between creative and analytical dimension of music is very ambitious. As Luciano Berio said, “*all speech about music is incomplete, by its nature.*” Every great work always implies a plurality of texts, even without this is not identifiable on the surface: sources, quotes, ancestry, who have been assimilated by the author, even unintentionally. This multiplicity requires the analysis of multiple new perspectives.

The *aesthetic-cognitive* approach by Francesco Giomi and Marco Ligabue is a very powerful method, which allows to analyse music on the basis of *perception*. It starts from a series of studies on the perception of contemporary music and formalizes a set of procedures for the description and analysis of the sound text at different levels. It is “aesthetic” because it stands on the side of listening and “cognitive” because, through the analysis, it seeks to identify the mechanisms of perception and interpretation of composition gestures.

Tautologos 1 (1961) by Luc Ferrari is a composition for magnetic tape. It revolves around classic electric organ sonorities, animated with the fizz of less readily attributable sonic particles. It has a particularly clear compositional strategy by

which a certain phrase, in which almost all sound events of the work are, is repeated several times, forming a music period that emphasizes more the only real thematic change in the work.

This lecture would like to analyse *Tautologos 1* and point out some of its characteristics starting from the *aesthetic-cognitive* approach.

Selective bibliography:

Giomi, F. and Ligabue, M. “An Aesthetic-Cognitive Approach to the description of the sound object”, in *Acta Semiotica Fennica*, University of Helsinki, 1995.

Di Scipio, A. “Riflessioni sull'analisi della musica elettroacustica e informatica.

Esperienze e spunti teorici”, proceedings XI Colloquio di Informatica Musicale, Bologna, 8-11 Nov 1995, Università di Bologna, Bologna, 1995

Berio, L. “Remembering the future”, Harvard University Press 2006

Fubini, E. “Estetica della musica”, Società Editrice il Mulino, Milano 1993

Benjamin, W. “Das Kunstwerk im Zeitalter seiner technischen Reproduzierbarkeit”, 1936

Barry Truax *Riverrun* (1986/2004), a case study from the TaCEM project, exploring new approaches to techniques of analysis and re-synthesis in the study of concert electroacoustic works

Michael Clarke

CeReNeM, University of
Huddersfield, UK
j.m.clarke@hud.ac.uk

Frédéric Dufeu

CeReNeM, University of
Huddersfield, UK
f.dufeu@hud.ac.uk

Peter Manning

Durham University, UK
p.d.manning@dur.ac.uk

Michael Clarke is a Professor at the University of Huddersfield. Both as a composer and as a software developer for music he has won a number of prestigious international awards. He initiated a new approach to the analysis of electroacoustic music, Interactive Aural Analysis.

Frédéric Dufeu is Post-Doctoral Research Assistant in Music Technology at the University of Huddersfield, where he is working on the AHRC funded TaCEM project initiated by Michael Clarke and Peter Manning. He previously worked as a Teaching Assistant in Computer Music and Electroacoustic Music Studio Manager at Université Rennes 2.

Peter Manning is a Professor at Durham University. His primary area of research is the development of electroacoustic music from its birth to the present day, embracing the evolution of the associated technology, the ways in which composers and performers have embraced its possibilities, and the scope and nature of the resulting repertory.

At last year's EMS in Lisbon we introduced the TaCEM project (Technology and Creativity in Electroacoustic Music), a 30-month project funded by the UK's Arts and Humanities Research Council, and demonstrated the generic TIAALS software being produced as part of this project. This year we present an update on the project, focusing particularly on the first of our Case Studies, Barry Truax's *Riverrun*.

Eight works have been selected for the project, taking into account criteria such as historical context, the nature of the synthesis techniques employed, and the aesthetics that have underpinned their realisation. Key considerations have included the accessibility of the technical resources and composing materials used in their production, and opportunities to pursue particular lines of enquiry with the composer concerned. In selecting the eight works for detailed study, a further consideration has been the extent to which the composers explored techniques that were already available at the time in ways that are unique

and distinctive, or alternatively developed entirely new methods of synthesis in pursuit of their creative goals. The pioneering work of Barry Truax in terms of developing techniques of granular synthesis assign his achievements almost exclusively to the latter classification, and the composition of *Riverrun* (1986/2004) is a landmark achievement in this regard.

Truax's composing environment evolved from the early study of interactive real-time synthesis techniques at the Institute of Sonology, Utrecht 1971-73, exploring the possibilities of using Poisson-ordered distributions in the generation of microsound, to the emergence of entirely granular techniques at Simon Fraser University, British Columbia a decade later, culminating in the development of his program GSX designed specifically for waveform-based synthesis and first used to compose *Riverrun*, and its later extension, GSAMX, that extended these granular techniques to include the manipulation of previously sampled sound material.

At the time of composition conventional minicomputers still lacked the capacity to generate multiple voices of granulated sound material in real time, but for Truax the acquisition in 1982 of a high speed bit slice array processor, the DMX 1000, provided the enhanced processing power necessary for achieving such a goal. The unique characteristics of its special hardware and associated programming environment, managed in turn via a host PDP 11/23 computer, both empowered his creative objectives and also materially shaped and influenced the ways in which they could be practically achieved. The significance of such causal relationships in the evolution of the electroacoustic music repertory has yet to be widely understood, and this study of *Riverrun* corroborates the importance of such a line of investigation. In this case it has been possible to carry out a detailed study of the original system, still maintained in working order by Truax, leading to a reconstruction of key elements of *Riverrun* using a Max-based simulation of GSX, the authenticity of the results being assessed

both subjectively by means of a direct aural comparison and also measured objectively using software.

This presentation will include a demonstration of examples of the software we have developed to enable readers to engage with *Riverrun* interactively, both by analysing the original recordings interactively and by using our emulation of the GSX system to be able to recreate passages of the work and manipulate the techniques employed in order to learn more about them. We will also give examples of other materials we have collected in relation to this Case Study, including videos of the composer himself working with the GSX system and discussing the composition of *Riverrun*.

Further information on the TaCEM project, and to download current and new software resources related to the project as they become available go to: <http://www.hud.ac.uk/research/researchcentres/tacem/>

Analysing the Creative Process through a Modelling of Tools and Methods for Composition in Hans Tutschku's *Entwurzelt*

Frédéric Dufeu

CeReNeM,
University of Huddersfield, UK
f.dufeu@hud.ac.uk

Alain Bonardi

CICM,
Université Paris 8, France
alain.bonardi@gmail.com

Frédéric Dufeu is Post-Doctoral Research Assistant in Music Technology at the University of Huddersfield, where he is working on the AHRC funded TaCEM project initiated by Michael Clarke and Peter Manning. He previously worked as a Teaching Assistant in Computer Music and Electroacoustic Music Studio Manager at Université Rennes 2.

Alain Bonardi is a Senior Lecturer in Computer Music at Université Paris 8, member of the CICM (Centre de recherche en informatique et création musicale, belonging to the EA 1572 "Esthétique, musicologie, danse et création musicale"). He also collaborates with Ircam and its "Analyse des pratiques musicales" team as an associate researcher. He is also a composer and computer music designer.

The analysis of the creative processes involved in electroacoustic music may to a large extent rely on the thorough study of the technological tools used for the realisation of a musical work, both on the composition and on the performance sides. Understanding the behaviour and potential range of aesthetic results of such tools enables the musicologist to approach the studied work much beyond its final form, as presented on tape or as performed on a particular occasion: gaining knowledge on a wider technological context leads to considering the actual artistic decisions in the perspective of the potential outcomes that the composer and performer could face but not necessarily adopt. Hence, analysing an electroacoustic work on the basis of the study of its creative context, technological tools and compositional methods may constitute a useful approach to a better understanding of its related creative processes. However, the implementation of such an approach, mainly based on the hardware or software elements used during the creation of a given work, is not

straightforward. First, it implies that the considered technologies are still in use and have not become irreversibly obsolete. In this matter, new performances of a work are good opportunities for such investigations, as they often provide a technical update and require a deep understanding of the composer's intentions. The musicologist also needs to have access to the resources, which may not be available without a direct contact with the composer. Assuming these conditions are reached, the musicological and organological studies can encounter another issue, particularly in the digital domain: the sources are not always presented under forms that are directly readable by the analyst, for instance with a specific programming language. Despite all these possible difficulties, many cases of technological tools lean themselves to an in-depth investigation, leading to relevant conclusions on some of the creative processes appearing in the field of electroacoustic music.

In the context of a common session of several analytical approaches to a same electroacoustic piece, Hans Tutschku's *Entwurzelt* for six singers and electronics (2012), this talk focuses on the investigation and modelling of tools and methods of the compositional stage of the realisation of the work. During a performance of *Entwurzelt*, the electronic materials are simply triggered as events by one of the singers, without further interactivity – thus, the essential part of the research on the electroacoustic realisation aims at exploring the processes used during the compositional stage itself. As the electronics are used as an extension of the live vocal expression by the means of

harmonic amplification and complex texturing, the tools for generation and processing of both symbolic representations and audio signals are explored. Since the software tools that constitute the primary sources for our research were not directly designed to be used beyond their creative purposes, this talk presents software modelling implemented by the two authors to demonstrate the technological context in which Tutschku could compose *Entwurzelt*, emphasizing his creative methods and the decisions he could make upon a wider range of possible materials and processing techniques.

Representation: From Acoustics to Musical Analysis

Pierre Couprie
IReMus, Université Paris-Sorbonne

Mikhail Malt
Ircam

PhD in musicology, Pierre Couprie is an associate professor and researcher at Paris-Sorbonne University. His research fields are the musical analysis/representation of electroacoustic music and the development of tools for research (iAnalyse Studio, EAnalysis) or musical production. He is also a member of steering committee of Musical Analysis French Society (SFAM) and Musimédiane online journal. As a performer, he is a member of Les Phonogénistes and The Electroacoustic National Orchestra (ONE).

Web site: <http://www.pierrecouprie.fr>

Mikhail Malt, having double formation, scientific and musical (Engineer, composer and musical conductor) started out his musical career in Brazil as both flutist and orchestral conductor, having conducting youth orchestras for almost ten years. He has a PHD grade with a thesis at the EHESS - Ecole des Hautes Etudes en Sciences Sociales - dedicated to the use of Mathematical Models in Computer Assisted Composition, was Associated Professor at Sorbonne Paris IV, from 2006 to 2012. Nowadays he is researcher and Computer Music Designer Teacher in the Educational Department at Ircam, Paris-France. He is currently pursuing his composition and research activities in the fields of musical modeling, musical representation and compositional epistemology.

This presentation will be done in two parts.

1) Sound Analysis and Representations

Musicologists use various types of sound representations to analyze electroacoustic music:

- The waveform and the sonogram are a good basis to explore and navigate in one or more audio files. They also allow to estimate time and spectral frame for sounds. Several software like Audiosculpt, SPEAR or TIAALS allow filtering operations to isolate a sound or a group of sounds to study their properties.
- Differential sonogram or layers of sonograms are good tools to observe global parameters of sound or music. They also highlight break of spectrum, dynamics profiles, or space motions by comparison of sound channels.
- The similarity matrix reveals structural patterns, recurrence in several sound parameters, or musical characteristics. This

representation completes sonogram to explore global form or complex micro-structures.

- Audio descriptor extraction helps the listening to identify global morphologies, transitions, and articulations. One of the main problems using low-level audio descriptors being the redundancy of information among them. Many of them being correlated and bringing the same information. The first step to work with audio descriptors is to reduce the dimensionality of the analytical data space and find what features are useful to describe the audio phenomena we are focusing on. With this main goal, we would like also to present a tool intended to musicologists, that will help in the analytical workflow and in the proper audio descriptors choice.

2) Moving to Analytical Representations

These different types of acoustic representations are the basic tools to explore

and extract information to complete aural analysis. In the other side, researchers create musical representations during analytical process. From structural representations to paradigmatic charts or typological maps, the goal of musical representations is to explore masked relations between sounds (paradigmatic level), micro-structures (syntagmatic level) or external significations (referential level). Researchers also need representations to present their works. To do that, they create graphic representations associated with sound or video to have more intuitive examples.

Relation between both types of representations — acoustics and musical — often consists to associate them through panes or layers' software. Transferring information between them or extracting information from acoustic representation to create analytical graphics are complex operations. They need to read acoustic representations, filter no significant parts, create a pre-representations, and associate them to other information to create analytical representations. To realize these operations, there are two main categories of software. The Acousmographe was developed to draw graphic representations guided by simple acoustic analysis. The second generation, represented by EAnalysis (De Montfort University) and TIAALS (Huddersfield University) improve features of Acousmographe with analytical tools to explore the sound, work with other types of data, or focus on musical analysis.

This presentation will explore methods to improve these techniques and propose some new research directions for the next generation of software. Musical examples are extracted from *Entwurzelt* by Hans Tutschku for six voices and electronics.

Selective bibliography:

Pierre Couprie, "Eanalysis : aide à l'analyse de la musique électroacoustique", *Journées d'Informatique Musicale*, 2012, p. 183–189.

Pierre Couprie, "Improvisation électroacoustique: analyse musicale, étude génétique et perspectives numériques", *Revue de musicologie*, 98(1), 2012, p. 149–170.

Mikhail Malt, Emmanuel Jourdan, "Le 'BSTD' – Une représentation graphique de la brillance et de l'écart type spectral, comme possible représentation de l'évolution du timbre sonore", International conference L'ANALYSE MUSICALE AUJOURD'HUI, Crise ou (r)évolution ? proceedings, Strasbourg University/SFAM, 19-21 november 2009.

Mikhail Malt, Emmanuel Jourdan, "Real-Time Uses of Low Level Sound Descriptors as Event Detection Functions", *Journal of New Music Research*, 40(3), 2011, p. 217-223.

A Method For the Analysis of the Relation Between Symbolic Notation and Electroacoustic Textures In Hans Tutschku's *Entwurzelt*

Bruno Bossis

Laboratoire Musique
Equipe de recherche Arts et Pratiques
Poétiques
Université Rennes 2
bruno.bossis@uhb.fr

Laurent Pottier

CIEREC - EA 3068
UJM-Université Lyon-Saint-Etienne
laurent.pottier@univ-st-etienne.fr

Bruno Bossis is an associate Professor in analysis and computer music, and permanent researcher at the University of Rennes 2, in the music laboratory (Team Arts : Pratiques et poétiques, EA 3208). He is also a lecturer and associated researcher at the University of Paris-Sorbonne. Editor of several books, he is the author of numerous articles on electroacoustic music.

Laurent Pottier is a Senior Lecturer in Computer Music at the Université of Saint-Etienne and associate director of the CIEREC (Centre Interdisciplinaire d'Etudes et de Recherche sur l'Expression Contemporaine, EA 3068). He is also the director of the Master of Réalisateur en Informatique Musicale (Computer Music Producer) at UJM.

Any partition is a symbolic representation of the first level, wherein a graphic object corresponds to an interpretive procedure performed on instruments or with voices. In mixed music, indications of a different order allow to relate the score and the electronic sounds. The use of an electronic device, by itself the result of the composer's creative thoughts, produces a complex situation that includes a traditional symbolic writing, information on non-standard devices, and a very specific electroacoustic writing (spectral transformation, synthesis, modulations, filters, patches...). Our work, which has to be considered as a first step, focuses on the relationship between partition and sound textures.

This talk will describe a new analytical approach in this context. The difficulty lies in the fact that one has to take into account both a symbolic writing on a first level, and a sort of "double encoding". Indeed, it is impossible to stick to a study of the partition regardless of the electronic setup, and vice versa. The "double encoding" resides in this

complex situation: a symbolic writing, which is directly interpreted and a more intricate way of working with sounds. In our research, the objective is to take account of the musical notes, of the interpretation (as a possible sound translation of the score), and of the electroacoustic sound textures (i.e. the result of the sound generation). Yet, the whole method must be consistent and must provide simple representations of complex phenomena. We chose to work, as expected, on the analysis of the score and on the one of the electroacoustic parts, but also on the interpretation of the partition, so as to get an intermediate source between score and electroacoustics.

The musicological analysis is based on:

- the mapping between different representations;
- the results of the score analysis and the spectral analysis of the sounds;
- the automatic search for similarities between these different approaches.

The score analysis uses the well-known principles of analysis in different fields:

melody, rhythm, harmonic structures and formal architecture. The underlining of formal articulations and symbolic paradigms is based on all available sources, i.e. both the score itself and the elements given by the composer (sketches...). The results are presented as graphs and tables, which can then be used to demonstrate all kind of relationship between score, interpretation and electronic textures.

The spectral analysis focused on one hand on the performers interpretation, and on the other hand on the electronic sound textures. It develops several complementary methods:

- the evaluation of the perceived virtual pitches, realised with Ernst Terhardt's algorithms;
- the measurement of the RMS energy per frequency band 1/3 octave (30 frequency bands from 30Hz to 15kHz);
- the calculation of the time-related derivative of the previous analysis (RMS per frequency band).

The values returned by these three types of signal analysis allow an automatic segmentation of electronic and vocal parts, dealing respectively with the pitches (and harmony), with the spectral richness and with the rhythmic and dynamic evolution of sound events.

These results are presented both as graphs, in order to visualize and identify the relationships between these different sound events, and tabulated statistics highlighting correlations and differences between the score, the electronic parts and the sound result. The combination of the analysis of the score and of the spectral analysis associated with the automatic calculation of high-level similarities, eventually lead to an approach of the musical style. The talk focuses on the entire piece of mixed music by Hans Tutschku: *Entwurzelt*, with an emphasis on some particular passages.

Analysis of *Incidences/résonances* by B. Parmegiani with an acousmatic score

Jean-Louis Di Santo
SCRIME

Jean Louis Di Santo was born in 1957. He studied classical guitar and electroacoustic composition in the conservatory of Bordeaux. He is the recipient of several awards including the 2005 Bourges and Phonurgia Nova competitions. He regularly participates with the SCRIME activity, in Bordeaux, and has played in several festivals (Syntheses, Futura, Elktrophonie, Musicacoustica...). He is especially interested in the relations between sound and meaning, he studied linguistics and semiotics, and collaborates with the MIM. He has discovered the sound minimal unit (EMS06, Beijing) and has created a system to notate the sounds based on reduced listening called "acousmoscribe" that allows 5 billions of combinations.

Free download:

http://scrime.labri.fr/index.php?option=com_content&view=category&layout=blog&id=21&Itemid=1491&lang=fr

He has participated in many conferences in France and abroad. He teaches electroacoustic music in schools and for the University of Bordeaux.

<http://jean-louis.disanto.pagesperso-orange.fr/>

The works I presented in previous EMS (EMS06, EMS09, EMS11), about the augmentation of the precision of sounds typology and their notation, based on Pierre Schaeffer's reduced listening, were a necessary stage but not a purpose in themselves. The goal is to write or analyse acousmatic works using a score made with this notation, like one can do with an instrumental score. To realise the first score using the symbols describing sound parameters, that I call acousmatic score, I choose *Incidences/résonances* by B. Parmegiani because this work has already been transcribed by Parmegiani himself and has already been analysed by P. Mion, J. J. Nattiez and J. C. Thomas with the help of Parmegiani. Does my sign system enables to see and understand some elements that this transcription and this poietic analysis analysis do not ? Is seeing all of the sound's parameters in two dimensions on a score more efficient than to locate some of them

with a sonagram? On the other hand this very rigorous work which purpose seems very clear is particularly adapted to our goal: does fixing the sound in two dimensions in a visual simultaneity and keeping it out from the linear and irreversible flow of time enables what a purely hearing analysis does not? In other words, does an acousmatic score that aims to describe sound parameters allow a better comprehension of a work?

My sign aims to favorise a formal approach of electroacoustic works. I mean to describe the sound morphologies that the composer used and the structure of the over all form. Through this, I hope it allows a semiotic approach and can show TSU and spectromorphology figures.

Here the analysis no more depends on the sound itself, but depends on the possibilities that the transcription offers, transcription that itself depends on the precision of the parameters that are chosen to be written.. Thus, my sign is based on the linguistic

model of the minimal unit made of a set of distinctive features. The distinctive features described here are those described in the TARSOM. This model is very efficient because it is based on a few number of elements that allows both a great number of combinations and a great flexibility of use.

To make the analysis of this work, I used several methods: the one used in traditional analysis of instrumental score, taking into account that each sound has its own track, the one used in hearing analysis, and the one that emerge of the sign I used, that depends on its possibilities and on its limits, that I should develop. Due to the fact that this was never done before, a certain number of questions must be answered: how to list all the sounds that are used in composition? How to organise them on the score? Is it necessary to copy the instrument disposition in an instrumental score, classifying them by family and then from the lower to the higher from bottom up? Or is it more efficient to put them in order of appearance?

From there it is possible to elaborate a “key signature” that can show what I called “soudality” and “soudulation”, looking towards instrumental music and adapting it to “sound based music”. Besides, acousmatic score allows to see the different parts of the overall form and their proportion, morphological figures that I called “phase”, “entité” or “groupe”.

Bibliography:

DI SANTO, Jean-Louis, « Proposition d’une terminologie structurée et de notation symbolique de la musique électroacoustique », http://www.ems-network.org/article.php3?id_article=239, 2006

MIM, *les Unités Sémiotiques Temporelles*, Documents Musurgia, 1996

MION Philippe, NATTIEZ Jean-Jacques, THOMAS Jean-Christophe, *L'envers d'une œuvre, De natura sonorum de Bernard Parmegiani*, Paris, Buchet/Chastel, 1982

SCHAEFFER, Pierre, *Traité des objets musicaux*, Paris, éditions du seuil, 1966

SMALLEY, Denis, « La spectromorphologie, une explication des formes du son », <http://www.arssonora.org/html/numeros/numero08/08d.htm>

Symphonie pour un Homme Seul - de-acousmatized (SPHUS-d)

Giuliano Obici
University of Sao Paulo / TU-Berlin

Alexandre Fenerich
Federal University of Juiz de Fora
fenerich@gmail.com

Giuliano Obici (Brazil) - researcher and experimental media artist working primarily with sound. He holds a degree in Psychology, Communication and Semiotics. His postgraduate research resulted in the publishing of the book: "States of listening: medias and sound territories". PHD in music at the University of Sao Paulo and the Technische Universität Berlin. Recent works include: *Buy Auri*, *Lan House Concert*, *Laptop Choral*, *Simulacrum Chamber-Orchestra*. He has recently lectured at the London University of the Arts, UdK and TU Berlin, at Ultima Academy Oslo and presented works at *Relevante Musik* (Berlin 2013), *Next Generation* (ZKM Karkshue 2013), *319 Scholes* (New York 2012), *Wien Modern / E_may* (Vienna 2012), *FILE* (Brazil), and others.

Alexandre Fenerich (Brazil) - Associate Professor - Institute of Arts and Design Universidade Federal de Juiz de Fora, Brazil. Member of the Music, Visual Arts and Technology area at the Master of Arts, Culture and Languages program. Composer and sound designer. PhD in musicology (USP – Brazil), with main research in the relation between *musique concrète*, voice and intimacy. Has been working in music composition upon digital media, with focus on live electronics, spatial auralization and audiovisual live performances. Has participated in international projects as composer and sound designer in Germany, Portugal and France (ZKM, Münchener Biennale, Futura (France) and Berliner März Musik). Has been working with composers, filmmakers, dancers and designers since 2001.

In 2010 for the occasion of the *Symphonie Pour Un Homme Seul*'s 60th anniversary – the emblematic work of *musique concrète* – a live version performance of the piece was created in Rio de Janeiro.ⁱ The version idealized by Rodolfo Caesar was attended by the collaboration of José Augusto Mannis, who transcribed for musical notation and conducted the ensemble *Persone*.ⁱⁱ Tracking the inverse way of the *musique concrète*, it deprives from the original version its acousmatic feature. It made the sounds of the *Symphonie Pour Un Homme Seul* (SPHS) – a piece originally created to be played by loudspeakers in a concert situation – visible by the presence of the musicians and their gestures on stage, playing several musical instruments (guitar, flute, electric guitar, percussion, prepared piano), objects (empty plastic bags, portable pick-ups, toy piano, an emery) and sound foley elements (vocalized mimics, steps, among others).

An opera for the blind: acousmatic version

The *Symphonie pour un Homme Seul* (1949-50) is considered the mark of the *musique concrète*ⁱⁱⁱ. It represents the *Zeitgeist* of the postwar period, a wish for new paths for the musical language.^{iv} Schaeffer has described the work as an "opera for the blind".^v The absence of the visual contract with the sound source is the seed of acousmatism. He has defined the acousmatic

music as that made from the technologies of sound diffusion, "an opera for blind, an action without argument, a poem made by notes and noises, shards of texts, spoken or musical"^{vi}. The *musique concrète* does not arrive from a score to be performed. It was created in the same media that supports its reproduction.

An opera for seers: the de-acousmatic version (SPUHS-d)

What is singular on the version is its acousmatic condition extraction, shifting the piece from its original site to the place of the score and the performance by musicians. This process implies break of the acousmatic contract, exhibiting how the sound was made through the "live" performance^{vii}. So, the SPHS originally conceived as an "opera for blind" became an "opera for the seers", being de-acousmatized (SPUHS-d)^{viii}, somehow like a pantomime of the original version created in studio.

However, the live reconstruction become particular, bringing marks of the media it was originally produced. The dry cut, the loop, the pitch transposition, even the noise characteristics of the support became part of the performance, as an inverse way of mediation.

Perspectives and dialogues of the *musique concrète*

Considering this revisitation, the *Symphonie* literally gets body, gestures and movements to the eyes of the listener. On that way, it also implies an incorporation of a machine-body of the phonography, that was presented in the work, being imitated by the performers.

It doesn't mean that the body wasn't in the original version: presented by minimal vocal nuances, amplified and isolated by the acousmatic devices, and showed only by listening. However, it is precisely this approach that was broken in the de-acousmatized version, which stress a machine-type body.

As the de-acousmatic *Symphonie* is possible trace practices that are dialoguing with precepts of *musique concrète*. Composers that review the instrumental practices like *Helmut Lachenmann* who formulates his own music as "*Musique concrète instrumentale*"^{ix}; others who use the resources as phonographic writing process such as Peter Ablinger and his *Phonorealism*^x; groups playing against a fixed medium, thought as a

museum piece of folk music, like the ensemble Zeitkratzer that reinterpreted Lou Reed's album *Metal Machine Music*^{xi}; or even composers-performers that explore some characteristics of media playback technologies^{xii} in an acoustic way like Chico Mello's *John Cage at the Beach*.^{xiii}

Selective bibliography:

Caesar, R & Obici, G. Interview about *Symphonie pour un Homme Seul* - de-acousmatized. Rio de Janeiro, 2013.

Chion, M. Audio-vision: sound on screen. Columbia University Press, [1990]1994

Palombini, C. Musique Concrète Revisited. The Electronic Musicological Review, [1999] 2002, 1-23

Schaeffer, P. Traité des objets musicaux: essai interdisciplines. Paris: Seuil, 1966

Schaeffer, P. La musique concrète. 1a ed. Presses Universitaires de France, 1967.

i The version of the SPUHS was presented in the Parque Lage, Rio de Janeiro, 16 Oct. 2010 in the series "Ciclo Arte Sonora".

ii Caesar has been Pierre Schaeffer's student at the Conservatoire National Supérieur de Musique de Paris. Cf. Enciclopédia de Itaú Cultural de Arte e Tecnologia. <http://www.cibercultura.org.br/tikiwiki/tiki-index.php?page=Rodolfo+Caesar>, 02 Jan. 2014.

iii "Musique concrete was a method for producing, recording, and transforming sounds, disconnecting them from the perception of their original sources; it existed at the level of the material only." (Palombini, 1993, p.18)

iv "The most radical composers of the immediate postwar period were dedicated to the renewal of musical language from basic principles, and neither the straightforward development nor the ironic usage of previous genres held any immediate attraction. But although Boulez and Stockhausen, the leading figures in the avant-garde, did not even so much as toy with the title 'symphony', within the broader boundaries of this movement the symphonic genre was sufficiently entrenched to leave a few traces. Perhaps most extraordinary is the *Symphonie pour un homme seul* by Pierre Schaeffer (with Pierre Henry, 1950, rev. 1953), one of the earliest examples of *musique concrète*; it is, however, a symphony in name only." Cf. Arnold, Denis, et al. "symphony, the." The Oxford Companion to Music. Ed. Alison Latham. Oxford Music Online. Oxford University Press. Web. 20 Nov. 2013. <<http://www.oxfordmusiconline.com/subscriber/article/opr/t114/e6599>>.

v Schaeffer, 1967, 21.

vi Schaeffer, 1967, p. 21.

vii "La situation acousmatique, d'une façon générale, nous interdit symboliquement tout rapport avec ce qui est visible, touchable, mesurable. Par ailleurs, entre l'expérience de Pythagore et celle que nous font faire la radio et l'enregistrement, les différences séparant l'écoute directe (à travers une tenture) et l'écoute indirecte (par haut-parleur) deviennent, à la limite, négligeables." (Schaeffer, 1966, p. 93)

viii Term used by Michel Chion on *Audiovision*: "An inherent quality of the acousmetre is that it can be instantly dispossessed of its mysterious powers (seeing all, omniscience, omnipotence, ubiquity) when it is *de-acousmatized*, when the film reveals the face that is the source of the voice. At this point, through synchronism, the voice finds itself attributed to and confined to a body." (Chion, 1994, p.130)

ix As Helmut Lachenmann said in an interview to Gene Coleman 2008 <http://www.slought.org/content/11401/> (accessed 20 nov. 2013)

x The reproduction of "phonographs" by instruments can be compared to photo-realist painting, or – what describes the technical aspect of the "Quadraturen" more precisely -with techniques in the graphic arts that use grids to transform photos into prints." (Ablinger, 2005) accessed Phonorealism: the reproduction of "Phonographs" by Instruments – <http://ablinger.mur.at/phonorealism.html> (accessed 03 Jan. 2014)

xi Zeitkratzer's website http://www.zeitkratzer.de/asp3009_mmm.html (accessed 19 Apr. 2014)

xii This process remind the movement that looks for the process digital media in another way as Kelly propose in *Cracked Media* "By not using new technologies, they are, however, indirectly critiquing dominant modes of practice and use. The employment of older technologies in contemporary practice draws our focus in on the materiality of the media and its intended and unintended uses. (Kelly, 2009, p. 320)

xiii Obici, 2014, as article John Cage på stranden: Chico Mello förvandlar skivspelararen till en akustisk gittar och spelar bossa nova över öppna partitur och den experimentella romanen. Nutida Musik. Stockholm, v.2, 2013. (pp. 28 – 35) video of John Cage on the Beach at <http://youtu.be/-8k2TRBRdMY?t=4m12s> (accessed 16 Jan. 2014)

The unity of opposites: Jonathan Harvey's *Advaya* for cello and electronics

Cecilia Taher
McGill University, Montreal, QC, CANADA

Born and raised in Argentina, Cecilia is currently a PhD student in Music Theory at McGill University, where she works under the supervision of Dr. Stephen McAdams and Dr. Robert Hasegawa. Her main research interests center on analytical and cognitive approaches to issues of form, texture, and time in post-tonal music, and their repercussions on music aesthetics, performance, and education. She has presented her work at the Society for Music Perception and Cognition, West Coast Conference of Music Theory and Analysis, Texas Society for Music Theory, CIRMMT Music Perception Workshops, Florida State Graduate Forum, and McGill University Graduate Symposium. Also a flutist, Cecilia completed a Doctorate in Flute Performance at the University of Iowa in 2009 and has performed in several orchestras and chamber groups and premiered works by young American and Argentinian composers.

Subject and Theories.

In his book *In Quest of Spirit* (1999), Harvey describes the impact of his philosophical beliefs, in particular the Buddhist idea of the unity of opposites, on his musical thought. This paper explores links between Harvey's philosophical ideas and his compositional techniques for combining traditional and electronic instruments in *Advaya* for cello and electronics (1994). The idea of the unity of opposites is explicit in the title of the work: *advaya* is a first-century Buddhist word that means "not two."

Methodology.

Using analytical tools familiar to music theorists as well as concepts from music psychology, this paper examines the various musical manifestations of the idea of the unity of opposites in *Advaya* through the analysis of musical materials (including timbral elements, pitch-class collections, and motivic materials) and form.

Results

Musical Materials. At the most superficial level, the use of electronic synthesis and extended techniques in the cello creates an opposition between conventional and unconventional timbres, traditional and

electronic sounds. This opposition is mediated by the close relationships between the two parts: the electronic part is entirely derived from the cello part (Harvey, 2001). At a deeper level, a perceptible conflict emerges from the juxtaposition of two different types of pitch-class collections. The pitch material is based on compressed spectra that progressively distort the natural harmonic spectrum of the first string of the cello, A=220Hz. The passages that employ pitch-class collections derived from the harmonic spectrum are the most consonant moments in the piece and contrast with the more dissonant passages that use pitch-class collections based on distorted spectra. Depending on their intervallic content and frequency distribution, the pitch-class collections of the distorted spectra can be ranked from least to most consonant/stable. Each pitch-class collection is associated with different motivic materials, which (in keeping with Harvey's theories) can be conceived as either spectral or melodic depending on whether they convey a vertical or horizontal listening mode (a static or dynamic sense of musical time). The derivation of all the pitch-class collections and motivic materials of the work from the

spectrum of a single musical note evokes the concept of the unity of opposites.

Form. *Advaya* can be divided in 8 sections, each of which expresses a different degree of spectrality/melodicity, inviting vertical or horizontal modes of listening. The most spectral/vertical moments, which coincide with the regions of highest pitch stability, take place at the beginning and the end of the piece. Taking into consideration *Advaya*'s overall sense of dynamism, the music ends where it begins, moving away from its original state only to return to it, as if it had always remained immobile.

Concluding Remarks. As a result of the nature and characteristics of the musical materials and their organization within the formal structure, the borderline between the spectral and melodic qualities of music, between its vertical and horizontal dimensions, is blurred, suggesting a musical shape that is both yet neither, simultaneously

in motion and static. The idea of the unity of opposites is manifested in the very conceptual foundation of the piece: the temporal unfolding of the entire work derives from a single vertical conception, the atemporal spectrum of a single musical note.

Acknowledgements

I would like to thank the supervisor of this paper, Dr. Robert Hasegawa.

Selective bibliography:

- Harvey, J. (2001). "Spectralism," *Contemporary Music Review* 19/3, 11-14.
- Harvey, J. (2001). *Advaya for cello, electronic keyboard and electronics*. London: Faber Music.
- Harvey, J. (1999). *In quest of spirit: Thoughts on music*. Berkeley, Calif: University of California Press.
- Whittall, A. (1999). *Jonathan Harvey*. London: Faber.

TRANSCULTURATION: Western Intellectual Organization and Far Eastern Spiritual Listening

Lin-Ni Liao

Université Paris-Sorbonne

Taiwanese-French composer, Lin-Ni Liao, PhD in musicology and permanent researcher at the Université Paris-Sorbonne, is the artistic director of TPMC (Toute Pour la Musique Contemporaine) in Paris. She questions interculturality in all fields of her work, composition, artistic production, and academic research, the latter of which focuses on musical analysis, artistic identity, cultural heritage, and the role of women in contemporary music from the Far East.

*She has published three books including: *Pensée et langage musical d'Edith Lejet* (Ed. OMF, 2010), *Héritages culturels et pensée modern. Les compositeurs Taiwanais de musique contemporaine formés à l'étranger* (e-Sorbonne, October 2014) and *Fusion du temps : passé-présent, Extrême Orient - Extrême Occident* (Conference material co-edited with Marc Battier, Ed. Delatour, March 2014), and has written many articles about musical analysis as well as entries for the Taiwan section in *Dictionnaire des créatrices du monde* (Editions des femmes, 2013).*

We will observe the complex path of constructing and appropriating artistic identity, from disharmony to harmony, in the very personal approach of Taiwanese composer Wang Miao-Wen. Wang Miao-Wen was born after a long period of violent political, social, and cultural changes in Taiwanese history, from Japanese and Chinese imperialism to the attempts at redefining its own cultural identity. The first female electroacoustic composer from Taiwan to study and work in France, she was invited to Radio France's *Festival Présence*, in 1994 and 1996, and received the *Prix Résidence* at the XXI^e International Electroacoustic Music in Bourges. Between 1994 and 1995, she was the first Taiwanese composer to complete the curriculum at Ircam.

Wang Miao-Wen is an example of an artist who trained in and benefited from the interculturality of East and West. On a path shared between the two cultures, one observes the use of Taoist philosophy in both her personal theoretical and compositional process, through the sound organization - transcription, transmission, and transformation of the cosmological cultural heritage.

What material and personal methods are used relative to the differences that characterize the two distant cultures? Is she misappropriating Taoist elements or zigzagging on a transcultural path of creation? Where is her starting point and what is her destination? Where is the limit for this merger of cultures?

For nearly twenty years, Wang Miao-Wen has based her "book of changes" on the general structure of the *I Ching*. It is rare to see a personal theory become mature and find its balance between Western intellectuality and the spirituality of the Far East. In her electroacoustic works (acousmatic and mixed), her transculturality is a rigorous compositional preparation in the structural and technical context of a purely Western approach whose inspiration unfolds with the help of the philosophical Far East. A fusion of native language with an impressive Western analytical and Eastern cultural consciousness is constructed throughout her composing.

The image of two cultures, the relationship of human beings, and the phenomenon of universe are metaphorically represented by 8 fundamental elements of nature which refer to harmony between man and universe, as well as a bridge between East and West.

CHEARS ver.2.0

Combination and Integration of EARS2

Ruibo Zhang (Mungo)
PhD candidate of Music, Technology and Innovation Research Centre
De Montfort University
chears.info@chears.info

Lecturer at Composition Department
Shenyang Conservatory of Music, Liaoning, China
mungozhangruibo@gmail.com

Zhang Ruibo (Mungo) has been doing his doctoral research (CHEARS) with Prof. Leigh Landy since April 2012 under the International PhD (iPhD) program at De Montfort Univ. (DMU), Leicester UK. The mode of study will be changed to full-time PhD from April 2014 to April 2017 under the State Scholarship Fund by China Scholarship Council (CSC). He teaches electroacoustic music composition and theory at China Shenyang Conservatory of Music. He had his master's degree with Prof. Zhang Xiaofu and Kenneth Fields in China Central Conservatory of Music (CCOM). He was one of the translators for completing Chinese version of The Computer Music Tutorial (Curtis Roads) and The Study of Orchestration (Samuel Adler).

His research, CHEARS (China ElectroAcoustic Resources Survey), was selected into EMS07 conference, and he presented the research at De Montfort University, Leicester UK. After this, he continues his research: CHEARS.info, and presented it at the EMS08, EMS10 and EMS11 conference in Paris, Shanghai and New York respectively.

Context: The China ElectroAcoustic Resource Survey (abbreviated CHEARS) is intended to serve as the enhanced version of the ElectroAcoustic Resource Site (EARS run by the Music, Technology and Innovation Research Centre, MTI, at De Montfort University, Leicester, UK. www.ears.dmu.ac.uk). Its fundamental goal is to assist in the development of the field of Electroacoustic Music Studies in China. Besides contributing a Glossary, Index and Bibliography in Mandarin within the international EARS project, CHEARS also presents the collection of a broad variety of types of information, within the academic and non-academic areas of the site, for example, through its multi-user Comment, Reader, Message and Criticism systems, CHEARS offers Terminology, Bibliography,

Lecture and Concert sections, based on Web 2.0 technology to allow each user to add, modify and protect his/her knowledge on the site (<http://CHEARS.info>). After a 5-year development period from 2008 to 2013, it subsequently has become a bilingual internet-based collaborative research resource including the multi-user communication area which presents text resources, events and music criticism sections unique to China as well as within the EARS project, itself.

CHEARS 2: In October 2013 the Compose with Sounds software (cws.dmu.ac.uk) and the pedagogical ElectroAcoustic Resource Site known as EARS 2 (www.ears2.dmu.ac.uk) were introduced to China officially by Prof. Leigh Landy, the director of the MTI as well as the founder of

the original EARS project, Compose with Sounds and EARS2 projects. EARS 2 takes a different path from the original EARS initiative which is a multilingual internationally peer-reviewed professional (multilingual) glossary with an accompanying subject index for electroacoustic (EA) music as well as a bibliographic resource. EARS 2 is intended for young people, in particular the age group 11-14, and its goal is to assist them in learning about and subsequently gaining interest in composing sound-based music. Furthermore, Compose with Sounds creative software (supported by an EU Culture grant) is linked seamlessly to EARS2 which is a dynamic eLearning site offering learning information including a wide variety of hypermedia examples. The planned Chinese version of EARS 2 intends to offer a perfect opportunity to provide schools, especially pre-higher educational institutions in China, with a free tool that encourages creativity and fits national circumstances academically. Therefore, the combination and integration plan of EARS2 on CHEARS has been found to be of great urgency and may end up being completed prior to the full CHEARS adaptation of the EARS site that was officially introduced to China in 2006.

This paper will start with an update (http://chears.info/frontend/lecture/alllectures.aspx?lectid=78) involving the expansion of the number of terminology and index respectively from 500 to nearly 700 items

and from 6 to 9 structures, including the three main EARS 2: CREATE, LEARN and LISTEN as well as the EARS2 encyclopedia. More importantly, this paper will present for the first time the original resource and methodology for research on CHEARS that takes on the Chinese cultural adoption of the EARS2 contents, e.g. “Chinese Composer Case Studies” and “China Soundscape Resources”. Those two objects are both adopted from the content of EARS2. However, the expansion of them will be more specific usage of the concept in Chinese cultural/compositional context than the hierarchical approach to present information concerning authors, translators, proofreaders and consultants regarding terminologies and bibliographies already related to EARS and EARS2 within CHEARS.

The CHEARS research project has been awarded a scholarship under the State Scholarship Fund by China Scholarship Council (CSC). The goal is to turn CHEARS an enhanced professional project for wide impact in China. Beyond the combination and integration plan, this paper will also discuss the most serious problem that electroacoustic music or music and technology encounters amongst some of main conservatories in China, namely, how to deal with talented, but not traditionally educated young musicians who demonstrate interest in pursuing music with technology, thus reflecting the pedagogical purpose of EARS2 in China.

Heritage of Gérard Grisey in China

Bai Zhao

Doctorate candidate in Music and Musicology at the University Paris-Sorbonne
zhao.bai.music@gmail.com

ZHAO Bai was born in China. She is a pianist, an organist, a harpsichordist, a composer and a Ph.D. student in musicology. She started playing the piano at the age of seven. After obtaining a Bachelor's degree in composition and electro-acoustic music in China, she moved to France. She studied at the Conservatoire Régional de Limoges and Versailles, where she completed courses of organ, harpsichord, singing and conducting. Then she did her master's degree in Music and Musicology at Paris 8 University. She is following a Ph.D. program with Professor Marc Battier in Paris from 2011 and Professor Joseph Butch Rovin at Brown University in 2012, in the city of Providence, Rhode Island, USA.

After World War II, some countries became the pioneers of the world in terms of culture, politics, science, technology and economy and exerted their influence on China. Among these influences, music and arts from France, Germany and North America were prominent in shaping the Chinese composers. After the end of the Chinese Cultural Revolution in 1976, young Chinese composers wanted to continue their studies overseas, studying new compositional techniques still foreign in China. Some of them came to study in France. Among them, were three Chinese students in composition at CNSMD de Paris, who had worked with Gérard Grisey (1946-1998), following an aesthetic born in 1970s, the most famous "French school" - Spectral Music. They are Xu Shuya (in France since 1988), Xu Yi (in France since 1988) and An Chengbi (in France since 1994). And now, they work most of the time as professors in China, Gérard Grisey was interested in sound. His music focused on the sound's timbre and harmony, including microinterval, overtone and noise... However, our three Chinese composers have their own original cultures (even though they are Chinese, they are from

different areas of China). How did they adapt to this new approach/concept...? Among the works of these three Chinese composers, I will present and analyse a few music samples by them, such as Xu Shuya's mixed music in **The Great Void II**¹ which used microintervals² with Flute and Xiao³; one of Xu Yi's principal mixed⁴ music works **Le Plein du Vide** written in 1997, in which she used the I-Ching that corresponds to the 64 hexagrams of the 192 quarters of tone of a full orchestra; and An Chengbi's mixed music **Saek.Gong**⁵, for flute, string quartet and fixed sounds. And I shall compare their music to Gérard Grisey's.

In this paper, I will address several issues: what sort of impact did Gérard Grisey leave on his Chinese students, in terms of inspiration? what are the inspiration impacts in the music of these Chinese students after their studies with Gérard Grisey? How does the Spectralism influence their works? How do these Chinese composers mix their culture with Grisey's⁶? Did they develop

¹ Taiyi II, 1991.

² The microinterval also exist in Chinese traditional music.

³ Chinese vertical end-blown flute.

⁴ Ensemble and electronics.

⁵ Space of colours, 2002.

⁶ He said "Spectral Music" had two levels: physical and cultural.

Spectral Music into their own language?
What will come next in Chinese acoustic music?

Selective bibliography:

WU, Linli (吴林励), *Xiandai dianzi jishu yu gulao dongfang zhexue de qiaomiao jiehe - Xu Shuya Taiyi II yinyue fenxi* (现代电子技术与古老东方哲学的巧妙结合 - 许舒亚《太一2号》音乐分析 Combination of Modern Electronic Techniques and Ancient Eastern Philosophies – Analysis of Xu Shuya Taiyi II), *Yinyue yishu* (音乐艺术 Art of music), n° 2, 2010, p.107-121.

Cohen-Levinas, Danielle, *Le Temps de l'écoute : Gérard Grisey ou la beauté des ombres sonores* (Gérard Grisey or the beauty of sound shadows), Harmattan, Paris, 2004.

BAILLET, Jérôme, *Gérard Grisey : Fondements d'une écriture* (Gérard Grisey : Fundamentals of writing), Harmattan, Paris & Montreal, Cop. 2000.

Pousseur's 'Huit Etudes Paraboliques': Musical and Social Contexts

John Dack

Middlesex University, London, UK

Born: Kings Cross, London 1950. Employed as photographer's assistant, gravedigger and peripatetic music teacher before studying music as a mature student at Middlesex Polytechnic (BA Hons, 1980).

Subsequent studies: PhD with Denis Smalley, 1989; Post-graduate Diploma in Music Information Technology (distinction), City University, 1992; MSc (distinction), City University, 1994; MMus in Theory and Analysis, Goldsmiths College, 1998; MA in Aesthetics and Art Theory (merit), Middlesex University, 2004.

In 1998, employed as Research Fellow at the Lansdown Centre for Electronic Arts, Middlesex University. In 2006 promoted to Senior Research Fellow. Since 2011 employed as Senior Lecturer in the school of Science and Technology and the school of Art and Design.

Research presentations at Sheffield University, Leeds University, Brighton University, De Montfort University, Istanbul Technical University, Kingston University, Huddersfield University, Edinburgh University. Conference presentations in Britain, France, Holland, Germany, Spain, China, Eire, Italy and Turkey.

Throughout music history there have been many examples of works considered to be of long (perhaps even excessive) duration. For many years Beethoven's 'Eroica' was estimated as the longest symphonic work. This was surpassed only by symphonies of Anton Bruckner and Gustav Mahler who expanded both instrumental resources and continued the late-Romantic tendency for increased duration. The rise of Modernism appears to have arrested these developments and the concert repertoire of post-war music once again has settled into works that usually conform to a traditional framework.

My paper will explore the specific contribution that electroacoustic music can make to challenging the accepted concert framework both in terms of a work's duration and the location in which it is to be presented to the public. My case study will be an examination of the particular practices of the Belgian composer Henri Pousseur (1929-2009) and his electroacoustic work 'Huit Etudes Paraboliques' (realized at the Westdeutscher Rundfunk studios in 1972). Each of these eight compositions is an autonomous work. Indeed, the longest Etude ('Voyage aux Éléments') is itself nearly 40 minutes in duration. However, according to

Pousseur they can also be regarded as source material to be 'plundered', reconfigured and thus re-mixed to produce new works. Furthermore, new musical material – by Pousseur or other composers – can be added. These 'Huit Etudes Paraboliques' were the first works of a 'Système des Paraboles' (Parabola System) where each piece has the potential for extension. Thus, the connection with earlier and indeed later 'open form' works is clear and, as a result, the 'Huit Etudes Paraboliques' are transformed into individual 'Paraboles-mix'. What is of relevance for the questions posed by the EMS2014 conference is that each new 'Paraboles-mix', though using material from one or more of the 'Huit Etudes Paraboliques', opens them up to infinite elaborations. Consequently, the musical material need not demand closure after a limited amount of time encouraging works of extended duration. The act of poesis on the part of the musician realizing the 'Paraboles-mix' now dominates.

Context

Pousseur's social commitment was a consistent thread in his intellectual development. It was particularly evident in

the first decades of his career as demonstrated by his book *'Musique Sémantique Société'* (1972). Similarly, his 'open' work *'Scambi'* (a rare example of an 'open' electroacoustic work) has social as well as aesthetic implications. Moreover, Pousseur even imagined real-time realizations of *'Scambi'*, possibly resulting from interaction by several musicians in 'music workshops'. Clearly, such social gatherings would not conform to traditional concert practices. These ideas were speculative and perhaps even utopian. The technology of the 1950s prohibited the full potential of Pousseur's vision. Nevertheless, I will argue that Pousseur's combination of practice and theory can now be fulfilled and inevitably challenges both the nature of long durations and traditional concert practice.

Methodology

Drawing on and elaborating research already undertaken on *'Scambi'* my methodology will be to examine specifically the *'Huit Etudes Paraboliques'* both as 'closed' works and in their manifestations as re-appropriated, 'open' works. There are

several *'Paraboles-mix'* where Pousseur and others use the original material in 'live' re-mixing. These *'Paraboles-mix'* can be subjected to a cultural interpretation along the lines of Craig Ayrey's article *'Pousseur's Scambi'*, and the new problematics of the open work' where interpretation of 'openness' can lead to the premature 'closing' of the work under consideration. I believe it will also be possible to show a continuity between Pousseur's methods in the WDR studio where the equipment allowed him to embark on *'voyages sonores'* and the final realization before an audience in non-traditional venues.

Selective bibliography:

Ayrey, C. (2005) Pousseur's *Scambi* (1957), and the new problematics of the open work
www.scambi.mdx.ac.uk

Pousseur, H. (1972) *Musique Sémantique Société* Paris-Tournai: Casterman
 - (1999) *Parabeln und Spiralen* Münster: LIT Verlag

Electroacoustic concert and happening performances of the '60s and early '70s in Finland

Mikko Ojanen

M.A., PhD candidate

Doctoral programme for Philosophy, Arts and Society

Department of Musicology

University of Helsinki

mikko.ojanen@helsinki.fi

Ojanen received his master's degree at the Department of Musicology, University of Helsinki in 2007. His master's thesis concentrated on the history and analysis of electroacoustic music of Mr. Jukka Ruohomäki – one of the early electronic music composers in Finland. After finishing his studies Ojanen has continued the research of the history of Finnish electroacoustic music as a Ph.D. student and from 2014 as salaried Ph.D. candidate in the doctoral programme for Philosophy, Arts and Society. He has also acted as a part-time lecturer in the Electronic music studio at the University of Helsinki teaching studio technology and history of electroacoustic music. From 2012 Ojanen has acted as an editor-in-chief of Musiikin suunta: the journal of Finnish Society for Ethnomusicology. Amidst his research and work at the university Ojanen has been performing as a musician, sound technician and music producer in several electronic, experimental and popular music projects and groups.

In this presentation, I'll introduce different examples of how a quest for new means to perform music in concert and happening settings manifested in the early years of electroacoustic music in Finland. These examples are gathered from the works of Erkki Kurenniemi (b. 1941), the early pioneer of Finnish electroacoustic music, and composer Henrik Otto Donner (1939–2013). During the first two decades of electroacoustic music in Finland Mr. Kurenniemi played a central role in designing the instruments and collaborating with Finnish and Swedish artists. In his electronic musical instrument design, Kurenniemi used advanced applications of digital controlling methods for sequencers and memory units. Furthermore, his interface design challenged the traditional means of interacting with the instrument – in some cases not only with the player but also with audience. Kurenniemi's designs led the Finnish scene to a unique position in the fields of electroacoustic and avant-garde music, and it was recognized in the Nordic countries.

Kurenniemi's composition methods present an early example of applying live performance in the studio work. This reflects his impulsive way of working and it was

present already in his first work *On-Off* (1963), completed as a real time live improvisation with the studio equipment. Later, Kurenniemi postulated his methods as composition rules – e.g. “the work has to be finished in a single day”. Another example of Kurenniemi's early musical output was presented in a happening *Limppiece* (1964) organized by Donner in the Ateneum Art Museum in Helsinki. The electronic piece in the happening was an hour long tape with slow transitions that one couldn't perceive without leaving the space for a few minutes. Furthermore, the audience was instructed to move around in the museum and listen to the soundscape. Although the actual sound work is vanished, the graphical score still exists.

In *Electric Quartet* (1968) Kurenniemi realized an application for a collective instrument. Electric quartet is an instrument designed to be played by four people. The layout of the instrument sets up somewhat chaotic premises for a performance. Each of the four controllers is interconnected together through the main frame, resulting in a performance which output is combination of four players' actions. Furthermore, the user interface and the sequencer of the instrument set certain constraints which drive the overall performance process.

Kurenniemi's other instrument user interfaces are stretching the constraints of traditional methods of interacting with an instrument and search new means of performing music. The most provoking instrument is DIMI-S aka Sexophone (1972) played by several people touching each other to the bare skin. Another example presented here is DIMI-T aka Electroencephalophone (1973) which uses the player's EEG as a control signal of the sonic output. These biofeedback instruments were used even in concert settings, although resulting performance equalled more of a demonstration than a serious concert. Meanwhile, DIMI-O (1971), an electronic organ equipped with a video camera, was used with more interesting results, when the camera was aimed at the conductor's hands or faces in the audience and converted these gestures into music.

During the first years of the '60s, Kurenniemi's close collaborator, composer Henrik Otto Donner visited practically all major studios in Europe, became acquainted with pivotal contemporary European composers and avant-garde artists and introduced himself to new, essential composition methods e.g. serialism as well as techniques of elektronische Musik and musique concrète. During 1963 and 1964 Donner was a key person in bringing happenings to Finland together with Ken Dewey, Terry Riley, Jan Bark and Folke Rabe.

Donner experimented with sound diffusion in space and audience interaction in his early works such as *Ideogramme I & II* (1962–63) and *For Emmy 2* (1963). For example the

idea in *Ideogramme I & II* was to test how players' synchronization and concentration could be distracted with different electronic means (12 radios in *Ideogramme I* and tape music in *Ideogramme II*). Players and loudspeakers were located in the exhibition space where also audience could wander around.

Selective bibliography:

Mikko Ojanen 2013. Erkki Kurenniemi's electronic music studio. In *Erkki Kurenniemi: a man from the future*. (Ed.) Maritta Mellais. Helsinki: Finnish National Gallery. 99–128. <http://www.lahteilla.fi/kurenniemi/julkaisu/Ojanen.pdf>

Mikko Ojanen and Kai Lassfolk 2012. Material tape as a piece of art: Case studies of an inconstant work-concept in Erkki Kurenniemi's electroacoustic music. *EMS Proceedings and Other Publications: EMS12 - Meaning and Meaningfulness in Electroacoustic Music – Stockholm*. http://www.ems-network.org/IMG/pdf EMS12_ojanen_lassfolk.pdf

Mikko Ojanen, Jari Suominen, Titti Kallio & Kai Lassfolk 2007. Design Principles and User Interfaces of Erkki Kurenniemi's Electronic Musical Instruments of the 1960s and 1970s. *Seventh International Conference on New Interfaces for Musical Expression: NIME 2007*: 88–93.

http://itp.nyu.edu/nime/2007/proc/nime2007_088.pdf

Electroacoustic Music of Extended Duration: A Question of Format

Prof. Barry Truax
School of Communication
Simon Fraser University
Email: truax@sfu.ca

Barry Truax teaches courses in acoustic communication and electroacoustic music. He worked with the World Soundscape Project, editing its Handbook for Acoustic Ecology, and has published a book Acoustic Communication dealing with sound and technology. As a composer, Truax is best known for his work with the PODX computer music system which he has used for tape solo works, music theatre pieces and those with live performers or computer graphics. In 1991 his work, Riverrun, was awarded the Magisterium at the International Competition of Electroacoustic Music in Bourges, France. Truax's multi-channel soundscape compositions are frequently featured in concerts and festivals around the world.

Although popular music has a well-established connection to specific recording formats, most obviously in terms of duration, number of channels, available frequency and dynamic range, and currently, levels of data compression, electroacoustic music has generally tended to ignore these format restrictions at the level of composition and performance, and made appropriate compromises in the context of distribution. Some historical exceptions with instrumental classical music may be noted where pieces were composed for the commercial recording format of the day, but the Nonesuch label's commissions for Morton Subotnick in the late 1960s are regarded as the first electroacoustic pieces composed specifically for the LP format, a tradition that the author continued for his 1985 release of the *Sequence of Earlier Heaven* LP, and the later release of 8 solo CD's after 1987. The crucial distinction is whether the CD format during recent decades has been regarded as a purely distribution medium for an arbitrary grouping of works designed for individual concert performance, or as a compositional format for creating works, or sets of works of extended duration, something seldom encouraged by those programming electroacoustic music concerts. This

tendency towards standardized durations raises the question as to the type of compositional thinking involved in the extremes of work duration – the miniature and the large-scale work, the latter influenced by the value placed on it in 19th century classical music, particularly with the symphony and opera.

Jonathan Sterne has recently proposed “format theory” for the analysis of the cultural phenomenon of the mp3 format to account for the dynamic relationship between industrially engineered audio formats and listener practice. The individual downloadable file, having superseded the CD as the format of choice for most younger listeners, as well as the 5.1 multi-channel format for commercial entertainment, create serious limitations for the future of electroacoustic works of extended duration and multi-channel formats of 8 or more channels, risking further marginalization of the artform. The challenges are not only the limitations of format, but following Sterne, their relation to the listening stance and cultural appropriation of the user. The paper will summarize the author's compositional strategies for thematizing his LP and CD publications, and discuss the contemporary challenges and alternatives for today's

electroacoustic composer, with particular attention to the practices of soundscape composition. The flexibility of the electroacoustic medium, existing as it can, independent of live performance, may offer possible answers to the dilemma of whether to adapt the music to existing formats created and controlled by industry, or whether to offer creative alternatives within and outside of those formats.

Selective bibliography:

J. Sterne, *MP3: The Meaning of a Format*, Duke University Press, 2012.

B. Truax, "Sequence of Earlier Heaven: The Record as a Medium for the Electroacoustic Composer," *Leonardo*, 20(1), 1988, 25-28.

B. Truax, "Soundscape Composition as Global Music: Electroacoustic Music as Soundscape," *Organised Sound*, 13(2), 103-109, 2008.

B. Truax, "Sound, Listening and Place: The Aesthetic Dilemma," *Organised Sound*, 17(3), 1-9, 2012.

COMPUTER NETWORK MUSIC

Approximation to a far-scattered history

Miriam Akkermann
Berlin University of the Arts
akkermann@gmail.com

Miriam Akkermann was born in Seoul/Korea. After a BA in Product Design at Free University of Bolzano (I), she took a classical flute degree and a MA for New Music and Technologies at Conservatorio C. Monteverdi in Bolzano, and studied composition and Sonic Art. Currently, she is completing her PhD at University of the Arts Berlin (musicology) with a research project supervised by Dörte Schmidt and Martin Supper. She received research scholarships from Leo Baeck Institute in New York (2009), a DAAD grant for research at IRCAM/Paris (FR) and Berkeley (US) (2011), and the Elsa Neumann grant of Berlin for young academics research (2011-2013). Besides, her sound installations and compositions have been showed at several festivals and she performed in various improvisation-based contexts. She performs as a musician in various improvisation-based contexts.

www.miriam-akkermann.de

Members of *The League of Automatic Music Composers* were the first ones to use the term “computer network music”.¹ They started in 1976 to connect their Commodore KIM-1 computers. The ensemble was formed by musicians from Oakland, California, funding members of the group were John Bischoff, Jim Horton, and Rich Gold.² In 1986 the ensemble *The HUB* was initiated by John Bischoff and Tim Perkis. It referred to its predecessor ensemble, debuted in 1987, and became one of the most famous computer network music ensembles. Since the 1990's there have been developed an unclear number of computer network music projects.

In 2007, Carôt located two phases of high activity in the field of computer network music, the first around the year 2000, the

second around 2005.³ This is reflected in papers, published works and working systems. Around 2007, the scientific review of computer network music ended. In the last two years or so, there again emerged several new projects using networked computer. The projects are well documented by their developers and the interest on networked music projects seem to grow.

The artistic and technological history was examined in media art, internet art (net art), and web art.⁴ There exists very few musicological research on computer network music.⁵ This may be caused by technical

1 cf. Breitweiser, Edward “Das Lied von der Nerd Informationale Improvisation in Bay Area Network Music“, 2011, p. 10, retrieved 12.23.2013 from <http://networkmusicfestival.org/programme/paper/>.

2 cf. Weinberg, Gil. “Interconnected Musical Networks: Toward a Theoretical Framework“, in: *Computer Music Journal*, Vol. 29 No. 2, 2005, p. 25.

3 cf. Carôt, Alexander, Alain B. Renaud and Pedro Rebelo, “Networked Music Performances: State Of The Art.“, in: *Proceedings of the AES 30th International Conference*, Saariselkä 2007, p. 132, see also Kapur, Ajay u. a. “Interactive Network Performance: a dream worth dreaming?“ in: *Organised Sound*, Vol. 10 No. 3, 2005, p. 218.

4 cf. Frieling, Rudolf and Dieter Daniels (Eds.), *Medien Kunst Netz / Media Art Net*, Springer, Wien 2004, Weiß, Matthias, *netzkunst*, VDG Weimar, Kromsdorf 2009, sowie Fahrenholz, Katja, “Kunst und Internet“, Diplomarbeit an der Technischen Fachhochschule Berlin, Studiengang Druck- und Medientechnik, Berlin 2006.

5 cf. amongst others Föllmer, Golo, *Netzmusik*, Wolke, Hofheim 2005.

constraints (some programming skills are helpful), the state of source material (hardly any score, often only web documentation, little historic documentation of technological developments, etc.), and the fact that there exists hardly any theoretical foundations for analysis methodologies.

Outlining existing (structural) approaches and suggested development directions to computer network music, a fragmentary historic overview will be shown based on following questions: Which projects have been discussed by several authors, possibly even in different contexts? Is there any indication for a (comprehensible) mutual

dependency between technological and artistic developments? The paper is concluded with a resume that can be used as base for discussion: Has the structure of more recent computer network music projects changed and how has the public reception developed?

Disposable Music

Georg Hajdu

Center for Microtonal Music and Multimedia (ZM4)

Hamburg University of Music and Theatre

georg.hajdu@hfmt-hamburg.de

Georg Hajdu grew up in Cologne where he obtained diplomas in molecular biology and musical composition. A stipend by the DAAD enabled him to enter the graduate program in composition at the UC Berkeley in 1990, obtaining a Ph.D. in 1994. His teachers included Johannes Fritsch, Krzysztof Meyer, Clarence Barlow and David Wessel. He also audited classes with György Ligeti in Hamburg.

In 2002, he became professor of multimedia composition at the Hamburg University of Music and Theatre. In 2004, he established Germany's first master's program in multimedia composition. In 2010, he was artist in residence with the Goethe Institute in Boston as well as visiting professor at Northeastern University, and master-minded the first conference entirely dedicated to the Bohlen-Pierce scale. He was also involved in a number of large international projects such as CO-ME-DI-A—a European Culture 2007 project focusing on networked music performance.

Disposable Music is, as defined in my paper, is an author-less artifact, generated by algorithmic composition and real-time notation. Its concept is a response to social and cultural developments in which the entanglement of man and machine is becoming increasingly intimate and our everyday life in its smallest ramifications is determined by electronic media. Due to new living conditions and the collapse of time and space caused by the Internet, a new value system is created in the Global Village, which now grants less respect for intellectual property as it was still sanctioned in the bourgeois era. Socio-economic shifts force musicians to adapt strategies that lead to new dispositifs, as well as narratives that metaphorically reflect those changes. Examples would be hybrid forms of conducted improvisation and composition, often referred to as comprovisation or conduction, or laptop orchestra performances, which are characterized by a diminishing focus on notated scores. We see a suitable reaction in the reinstantiation of music notation as a still adequate means of communication in the development of the dispositif of real-time composition and notation, in which music is generated

seemingly without author by a man and machine network and executed by performers in a top-down model. This is exemplified in works of Nick Didkovsky, Jason Freemann, Nic Collins, Georg Hajdu and others. The resulting scores are just as ephemeral as the actual sounding music. This is to be interpreted as an adequate response to the increasing devaluation of the artifacts of contemporary high-brow culture. However, this should not be equated with a devaluation of the dispositif itself. On the contrary, the true achievement of the author, and thus his/her actual artifact is the establishment of a real-time composing and notation system, by which, however, he/she embarks on another—academic—discourse. Thus the concepts inherent to the system are of primary and the aesthetic experience of the audience of secondary importance. The difference to the traditional concert experience can be compensated though, by carefully choosing algorithms and musical materials as well as exciting non-musical and theatrical narratives and dramaturgies in which the performances can be embedded. This paradigm shift coincides with the observations made by media theorist Friedrich Kittler in “Draculas Vermächtnis:

Technische Schriften” on the writing of texts.

Selective bibliography: (max. 5 references)

Hajdu, G: Disposable Music. In: Die Dynamik kulturellen Wandels: Essays und Analysen. Hrsg. Jenny Svensson. LIT Verlag, Münster, 2013.

Hajdu, G., Niggemann, K., Siska A., Szigetvári, A.: “Notation in the Context of Quintet.net Projects”. Contemporary Music Review, 29, 1, pp. 39 – 53 (2010).

Hajdu, G. and Didkovsky, N.: On the Evolution of Music Notation in Network Music Environments, Contemporary Music Review (2009).

Hajdu, G.: “Quintet.net: An Environment for Composing and Performing Music on the Internet,” LEONARDO Vol. 38, No. 1 (2005), pp. 23-30.

Hajdu, G.: „Research and Technology in the Opera Der Sprung“. Nova Acta Leopoldina, 92 Nr. 341 (2005), pp. 63-89.

Approaches to Distributed Agency and Shared Musical Meaning in Electroacoustic Improvisation

Doug Van Nort
Hexagram / Concordia University

Doug Van Nort is a sonic artist/researcher whose work is concerned with the complex and embodied nature of listening, improvisation both with and by machines, the phenomenology of time consciousness and of collective co-creation. His research takes the form of scholarly writings on these phenomena, composed and improvised electroacoustic music, pieces of sound-focused art and software artifacts designed and developed in these pursuits. Van Nort's work is a synthesis of his background in mathematics, media arts, music composition and performance; in recent years he has a growing engagement with teaching courses and workshops that combine this set of experiences with his unique take on Deep Listening practice, in which he is a certified instructor. Van Nort is currently a Banting Fellow at Concordia University in Montreal, where he is an affiliate of the Topological Media Lab, while also working as an Assistant Editor for the Computer Music Journal (MIT Press).

The world of electroacoustic music presents interesting challenges in regards to its reception by an audience: effectively expressing a given set of musical codes, the importance of spatial representation of musical forms, the choice of venue (e.g. proscenium vs. black box, immersion vs. localized sound sources). Many such challenges are shared by the world of free improvisation, whose "non-idiomatic" nature requires a similar active engagement by the listener in the construction of musical meaning. There is further a "spatial" or distributed nature to this genre through the way that musical gestures, as they are spontaneously constructed, are passed between performers, their meanings reinforced. In the meeting place between these two musical worlds, electroacoustic improvisation (EAI), we find very interesting strategies that have and continue to emerge in regards to the spontaneous evolution of musical codes, in ways that are inclusive of both performer and audience. While the approach of digital instrument-focused musics and NIMEs seek to introduce intimacy through visual expressions of gesture – a focus on source and the birth of sonic forms - many interesting strands in the

world of EAI have been concerned instead with the process of sonic structures forming through the sharing of musical expressions between performers. In this paper I will present examples that illustrate this phenomenon in two distinct categories: those which assume a distributed approach to the act of compositional structures, and those which share sonic gestural actions as they propagate through shared signals in the moment of performance. As examples, I will draw upon my own series of genetic orchestra pieces and work in several electroacoustic ensembles (Triple Point, Composers Inside Electronics, telematic performances with the FILTER system), as well as clear examples from the literature: The Hub, the Evan Parker Electro-Acoustic Ensemble and contemporary "laptop orchestra" practices. Through this exposition my intention is to articulate a set of practices that have arisen uniquely in the domain of EAI and which have proven effective in developing shared, emergent musical structures. In this process, I further hope to collectively speculate on the ways in which audiences are or are not invited into this shared construction of meaning as active participants.

Selective bibliography:

Gresham-Lancaster, Scot. "The aesthetics and history of the hub: The effects of changing technology on network computer music." *Leonardo Music Journal* (1998): 39-44.

Prévost, Eddie. *No sound is innocent: AMM and the practice of self-invention, meta-musical narratives, essays*. Small Pr Distribution, 1995.

Lake, Steve. "Evan Parker Electro-Acoustic Ensemble."

<http://www.chiltern.demon.co.uk/EP-EAE-SL.html> (last accessed April 30, 2014).

Originally printed in program for the 2004 Free RadiCCAls festival at Centre for Contemporary Arts, Glasgow.

Trueman, Dan. "Why a laptop orchestra?." *Organised Sound* 12.02 (2007): 171-179.

Van Nort, Doug, Pauline Oliveros and Jonas Braasch, *Electro/Acoustic Improvisation and Deeply Listening Machines*, *Journal of New Music Research*, 42(4), pp. 303-324, December 2013.

A Comparative Study of Graphic Representation Tools Based on an Aural Analysis of Philippe Leroux's *M.É.*

Landon Morrison
CIRMMT, McGill University

Landon Morrison is a PhD student and teaching/research assistant in the music theory department at McGill University's Schulich School of Music in Montreal, Quebec. Additionally, he is a member of the Centre for Interdisciplinary Research in Music Media and Technology (CIRMMT). Before beginning his doctoral studies, Morrison earned dual Master's degrees in violin performance and music theory from the University of Colorado at Boulder. His current research interests include studying the impact of software design on compositional process and musical structure, developing theoretical models for understanding electroacoustic musical syntax, and deconstructing the increasingly blurry aesthetic divide between "popular" and "art" music.

Acousmatic music poses a perplexing problem for the analyst – not only does it lack a notated score, it also utilizes a seemingly infinite sound palette made possible through the use of modern technology. Consequently, the analyst must employ new tools capable of tackling musical issues that resist traditional theoretical approaches. Toward this end, my presentation will assess recent developments in the field of electroacoustic music analysis by examining two software packages – Acousmographie and EAnalysis – that aim to offer multimedia toolkits, such as visual sonograms and the ability to create graphic musical representations. Acousmographie was produced by INA-GRM in Paris, whereas Eanalysis was developed by the MTI Research Centre of De Montfort University (UK). Both programs share a common lineage through their adoption of Pierre Schaeffer's typomorphological concepts, but the ways in which those basic tenets are visually implemented differ substantially. In order to facilitate a side-by-side comparison, I have conducted an aural analysis of Philippe Leroux's acousmatic work, *M.É.* (1998), using both software applications. Based on the results of this case study, I will address the analytical implications of each program by bringing the two platforms into dialogue with one another and offering an analyst's appraisal of their various strengths and weaknesses.

To begin, I will discuss my experiences working with the Acousmographie software, which was used in conjunction with the supplementary

'Aural Sonology' graphics plug-in co-created by Lasse Thoresen and Andreas Hedman. The Aural Sonology plug-in enables the analyst to create graphic musical representations using coded symbology, and to make annotations highlighting various parameters of the musical structure, such as "time-fields, layers, dynamic forms, transformations, and processes." The specific terminology used in the Acousmographie/Aural Sonology package reflects Thoresen's newly formalized program for the "aural analysis of emergent musical forms," and as a result, the software is heavily indebted to his analytical perspective. Next, I will shift to a consideration of the EAnalysis software, which was developed by Pierre Couprie, with the help of Simon Emmerson and Leigh Landy. Unlike Acousmographie, EAnalysis acts as an inter-textual hub of sorts, incorporating the work of several contributors, including Annette Vande Gorne, Stéphane Roy, François Bayle, Simon Emmerson, and Denis Smalley. The various approaches represented by these authors have been incorporated into EAnalysis in the form of unique annotative toolkits, thus encompassing a host of analytical possibilities that range from "Functions" (Roy) to "Spectromorphologies" (Smalley). After making some fundamental distinctions between these two programs, I will illustrate a few main points using comparative analyses of excerpts from Leroux's *M.É.*, and then suggest possibilities for the further development of

software features that might prove useful for future analysts.

Selective Bibliography:

Chion, Michel. Guide des Objets Sonores: Pierre Schaeffer et la Recherche Musicale. Paris: Éditions Buchet/Chastel, 1983.

Coupré, Pierre. "Graphical Representation: An Analytical Publication Tool for Electroacoustic Music," Organised Sound 9/1 (Cambridge: Cambridge University Press, 2004): 109-113.

-----, "(Re)Presenting Electroacoustic Music," Organised Sound 11/2 (Cambridge: Cambridge University Press, 2006): 119-123.

Schaeffer, Pierre. Traité des Objets Musicaux. Seuil: Nouvelle édition, 1964.

Thoresen, Lasse. "Spectromorphological Analysis of Sound Objects: An Adaptation of Pierre Schaeffer's Typomorphology," Organised Sound 12/2 (Cambridge: Cambridge University Press, 2007): 129-141.

Comparing comprehensibility of analytical representations of electroacoustic music: pictographic versus symbolic

René Mogensen
Birmingham Conservatoire, UK
Rene.Mogensen@bcu.ac.uk

René Mogensen (<http://ReneMogensenMusic.freeiz.com/>) teaches students in composition, music technology, improvisation and creative performance, at the Birmingham Conservatoire, UK. His current research is focused on analysis of electroacoustic sound as well as analysis of 'mixed' works that integrate acoustic instruments with electroacoustic sound. His wide-ranging compositional output has included sound works for Danish Public Radio (DRP1) and other broadcast stations, several New York choreographers, sound and music for multimedia theater productions, and a repertoire of concert performance works for various soloists and ensembles both with and without electronics. His work appears on recordings from Contreclisse, DR/Focus, CD Klassisk and other labels. He has received awards for his music work from the Eubie Blake Fund, John Anson Kittredge Fund, Yvar Mikhashoff Trust for New Music, Meet the Composer USA, Danish Music Council, Danish Composers' Society and the Royal Academy of Music in Aarhus, Denmark.

Stéphane Roy (2003) and Lasse Thoresen (2007; 2009) have proposed two different approaches to analytical notation of electroacoustic music: Roy's approach is pictographic while Thoresen's is a symbol system. Both approaches have been proposed for the purpose of producing practical listening scores that can have analytical usefulness. Each bases his approach on Nattiez's (1987) semiology of music, although Thoresen modifies the semiological tripartition and allows the listener to actively determine the listening mode employed, whereas Roy adapts Nattiez's 'neutral' listening mode.

In practice, how does Thoresen's symbol system compare to Roy's pictographic representations of electroacoustic sound, in terms of musicians' comprehension of sonic characteristics? How accessible are these approaches to musicians who are not specialists in electroacoustic music?

To begin to answer these questions, I conducted a pilot experiment to compare how the two approaches could facilitate the creation of listening scores by non-specialists. The experiment included the same works that Roy (2003) and Thoresen (2009) analysed: *Points de Fuite* by composer Francis Dhomont (1996) and *Les objets obscurs* by composer Åke Parmerud

(1994). The subjects were conservatoire student musicians and composers who had little or no previous experiences of these particular approaches to representation of sound.

Some patterns emerge from examination the subjects' attempts at transcriptions of the two works using the two approaches. Some interesting attitude tendencies can be interpreted from the subjects' written and spoken comments. These comments were their responses to the introductions to these approaches for representation of sound.

A few of the preliminary results examined are as follows: The pictographic approach allowed the students to indicate structure of sound over time. This seems consistent, although individual pictographic representations of sound vary greatly. Students immediately tended to expect the symbolic approach to have greater accuracy than the pictographic approach in showing sound object morphology. However, they found the pictographic approach significantly more accessible. A hybrid approach to representation may have greater accessibility which would be a valuable feature, in particular for non-specialists.

Selective bibliography:

- Nattiez, Jean-Jacques, 1987. *Music and Discourse Toward a Semiology of Music*. Transl. Carolyn Abbate 1990. Princeton University Press.
- Roy, Stéphane, 2003. *L'analyse des musiques électroacoustiques: modèles et propositions*. Paris: L'Harmattan.

- Thoresen, Lasse 2007. Spectromorphological analysis of sound objects: an adaptation of Pierre Schaeffer's typomorphology. *Organised Sound* 12(2): 129-41.
- Thoresen, Lasse, 2009. Sound-objects and Form-building Gestalts in Åke Parmerud's 'Les objets obscurs'. *Organised Sound* 14(3): 310-20.

The Electronic Manifesto: Scores for Tape and Synthesized Music in John Cage's *Notations*

Emily Richmond Pollock
Massachusetts Institute of Technology

Emily Richmond Pollock (pollock@mit.edu) holds the Class of 1947 Career Development Professorship as an Assistant Professor in the Music and Theater Arts Section at the Massachusetts Institute of Technology. She received her PhD in Music History and Literature in 2012 from the University of California, Berkeley

As music changes, so too do the material forms that prescribe, accompany, transmit, and explain it—often as a self-conscious process of innovation. The mid-twentieth century was a period of explosive musical change, consequently marked by an extraordinary awareness of the possibilities, limits, and importance of music's material forms: in particular, for music notation. A prime example of how changes in art are implicated in changing technology, the electronic music from this period precipitated a radical reinvention of the purpose and ontological status of the score. Those composers who struggled, in the early days of electroacoustic music, to find some way to capture in material form a new kind of sounding art, were equally struggling for the position and legitimacy of new sounds within a musical field of possibility. Thus, when composers notated electronic music it constituted a strong statement about how music notation could be maximally useful, advanced, and inventive. In challenging the relationship between score and performance, innovators in the notation of tape or synthesized music problematized traditional prescriptive or performance-based approaches and made it necessary to critically question why and how composers write music down.

The mid-twentieth-century obsession with the possibilities, limits, and importance of scores is reflected nowhere better than in

John Cage's 1969 compilation, *Notations*. This paper treats the examples of electroacoustic music in *Notations* as a bounded microcosm that, as a whole, presents a kaleidoscopic picture of the field of possibilities for notation up to the late 1960's. The aesthetic claims of the volume's composers were made ever more urgent the more that the artworks to be notated fell outside the traditional methods of music-making. These examples clearly illuminate the extent to which notational possibilities were in productive flux, and also the way that an absence of strict prescriptive function highlights the other kinds of work notation can do. In and among the 260 pieces in *Notations* are 30 pieces of music that use some kind of electronics, or about 12% of the whole. My paper examines the electroacoustic music in *Notations* for clues about the notational possibilities considered by composers at mid-century, focusing on common purposes and strategies. It is my intention that the theoretical and situational constraint imposed by this paper, that is, treating this material object as a kind of fixed microcosmic system, can lead composers, performers, and musicologists alike to see the spectrum of notational possibilities in a new light.

My paper also explores the ontology of *Notations* from the perspective of book history, showing how electroacoustic music particularly challenges the status of “the

book” in the mid-twentieth century as a kind of object or work presumably independent of sounding form. Because the emphasis of the collection is so much on the material and visual artistic characteristics of the various items, the electroacoustic music examples can be seen as some of the most radical experiments in the book because they are the examples for which technology demands a new material orientation. Each composer’s submission, then, can be seen as a kind of manifesto, and Knowles and Cage can be seen as political interpreters of the works

printed in *Notations*. By putting this set of materials together in such a way, all of the authors involved are making a collective statement about the boundaries (or lack thereof) of music, its notation, and its material forms. It is my contention that electroacoustic music in particular consistently challenges those boundaries.

Selective bibliography:

John Cage with Alison Knowles, *Notations* (New York: Something Else Press, 1969)

Read music at the concert: program notes of electroacoustic music composers

Florence Lethurgez

Senior Lecturer (Information and Communication Sciences) Laboratory IRSIC (Institute of Research in Information and Communication Sciences), EA 4262, Aix-Marseille University, France

I am, since 1993, Senior Lecturer in Information and Communication Sciences at the University of Aix-Marseille, France. My research focuses on the sociology of cultural institutions and of audiences, the sociology of music and more specifically the evolution of its discursive forms of mediation (reviews, programs, analyzes, etc.). My integration in a Book Related Professions Department leads me to work on the socio-economics of book trade (library, publishing, retail) and the sociology of their audiences in this digital age.

"Appetizer" presentation speech, program notes offer a form of symbolic framing and a concrete support of the works at the same time and places as their meeting with the concert audiences. The words of the composer are tools, deictic, shifters, seeking to establish the work securely in its context, to facilitate the perception or deepen understanding of the unique work they are responsible for presenting.

This communication function is amplified and institutionalized in the case of contemporary music and even more electroacoustic. The mediation of the composer's comment is more than ever essential to a situation of broadcasting in which the electroacoustic work is revealed in the unheard and the unseen, because of the absence of the usual visual references such as instruments, interpreters and scoring. The composer, even more than the analyst establishes explicit links that the work has with the world using the compositional means available. Communication issues are closely linked to those of composition, being crossed by the same tensions. The program notes express their preferred traces. However, few historical studies have sought to identify filiation, even less to analyze them on their own, as a phenomenon specific to a context which becomes systematic in

1950 and is considered in a very special way in the case of electroacoustic music.

Is there a specific metalinguistic electroacoustic music flow? What words do composers choose in texts that describe according to the listening guide, mind (intentions and procedures) for the creation, broadcasting and collection of unique musical works? What processes and discursive fields are most often used to conceptualize the aesthetics of sound in the case of electroacoustic music? Finally, in what way are these records significantly oriented towards the listener?

The investigation which is the subject of the work presented here borrows from validation methods specific to social sciences and focuses on two socio-semiotic corpus, one written, consisting of a set of references of works written in 1985 and filed in the Documentation Center of Contemporary Music in Paris, the other one is oral and comes from a sample speech of composers of electroacoustic music.

Two lines of analysis, by communicative genres and themes, designed to observe the flow of the particular language mobilized by composers, when constrained by the work and its broadcasting device. The analysis of the interviews allows to construct a typology linking the writing practice of these texts and

the universe of meaning that composers associate to it according to the comprehensive approach that is ours.

Thus, we hypothesize that these program notes provide a fertile and renewed prism of analysis of the aesthetic and ideological issues and problems related to the field of musical creation and especially electroacoustic music. The links between the record and the work depend on a social construction. Discursive categories cover components of the works with sufficient symbolic power to be given as a model, as evidenced by the metaphorical and operational concept of sound space.

Selective bibliography:

Lethurgez, Florence, « Écrire et communiquer sur son œuvre : les notes de programme du concert de musique contemporaine », *Comparatisme en Sorbonne, Écrire (sur) la musique : qui dit quoi ?*, Actes de la journée d'étude organisée par le Centre de Recherche en Littérature Comparée, université de Paris-Sorbonne, décembre 2012, à paraître.

- « Les métaphores dans les notes de présentation des œuvres contemporaines : un outil de communication avec les publics ? », *Métaphore et musique*, Journée d'étude organisée par le laboratoire RASM (Recherche Arts Spectacle Musique), UFR LAM, université d'Évry-Val-d'Essonne, novembre 2013, à paraître.

- « La réception de Claude Debussy au 20^e siècle à travers le prisme de la critique commémorative », *Journée d'étude Genres et formes de la critique musicale au XX^e siècle. Explorations poétiques, historiques et analytiques*, université de Besançon, 7 novembre 2014.

- « Le livre sur le disque: Richard Millet, Pierre Gervasoni et la musique contemporaine », *Journée d'étude Le technicien et l'écrivain. Questionner la légitimité des figures de la critique musicale du XX^e siècle à nos jours*, université de Paris-Sorbonne, 22 janvier 2015.

The Sampler

An historical, musicological and phenomenological study

Bertrand Merlier
Département Musique & Musicologie - Université Lumière Lyon 2
LYON – FRANCE
Bertrand.Merlier@univ-lyon2.fr

Assistant professor at Lyon 2 University / FRANCE, he has been teaching computer music and studio techniques at the Music & Musicology department, for nearly 20 years. In 2007, he founded the Master professionnel MAAAV (Musiques Appliquées aux Arts Visuels) (<http://www.maaav.fr>) with the help of his colleague Jean-Marc Serre. His subjects of researches are dealing with gesture interfaces in electroacoustic music, interactive music and sound spatialisation... Composer of instrumental and electroacoustic music (<http://tc2.free.fr/merlier/>) and performer in multimedia events (<http://labyrinthus.zz.mu/>).

The sampler has been invented almost 70 years ago; and among the potential inventors are Harry Chamberlin, in 1946 USA, closely followed by Pierre Schaeffer and Jacques Poullin who developed between 1951 and 1958 various phonogènes: machinery handling sound, based on the principle of variable speed tape recorder, which can be likened to a sampler.

Nowadays, the sampler is probably one of the most used musical instruments: from erudite electroacoustic music to popular electronic music, through music from audiovisual products (TV series or video game musical dressing). Since Mac OSX Lion, Apple has even incorporated a sampler (AUSampler) within its operating system.

Yet this instrument remains unknown, mysterious, invisible in film generics, CD covers or concert programs; organological or musicological studies appear to be very rare.

Literature only offers few items or practical manuals describing "how to use your sampler machine or how to sample sounds". The present work is a first presentation of several years of research and data collection, allowing understanding a little better the complexity of the situation.

First of all, the author proposes a very brief historical and musical overview, aimed at

making clear the richness of this instrument and its uses. Then, the analysis of these data leads to the identification of 6 dimensions (sample or result nature, sample or result perception, instrumental gesture type, intentions and *lutherie*) and the development of the block diagram below, highlighting the complexity of the study (in comparison with other musical instruments) and the magnitude of the musical revolution.

Selective bibliography:

Bossis (Bruno), Veitl (Anne) et Battier (Marc) (dir.), *Musique, instruments, machines. Autour des musiques électroacoustiques*, Paris, OMF, collection MINT, Université de Paris-Sorbonne, 2006, 256 p.

Chion (Michel), *Le son*, Paris : Nathan, 1998. Nouvelle édition : Paris : A. Colin, 2004.

Davis (Hugh), « A history of sampling », in : *Organised sound*, I/1, 1996.

Flichy (Patrick), « l'historien et le sociologue face à la technique : le cas des machines sonores », *Réseaux*, année 1991, Vol. 9, n° 46.

Heinrich Marie-Noëlle, *Création musicale et technologies nouvelles*, Éditions L'Harmattan, 2003.

Ultra-sensing: moving beyond ‘work’ and ‘venue’ in intermedia art

Simon Atkinson

Music, Technology and Innovation Research Centre
De Montfort University, Leicester

Kerry Francksen

Intermediality and Performance Research Group
De Montfort University, Leicester

*Simon Atkinson is a musician (primarily electroacoustic composition) and academic, who has worked since 2001 at De Montfort University, where he is Principal Lecturer in Music, Technology and Innovation. He is co-director of the EARS project and founding member of invisibleEARTs.
www.mti.dmu.ac.uk*

Kerry Francksen is a research practitioner, dance/intermedia artist and educator. She has been working as a professional practitioner since 1997, making interactive installation art, live performance and works for camera. Her current research brings together, and explores further, these rich and diverse practices in order to engage with the potentiality for creating ‘live-digital’ art works. This forms the basis of her PhD thesis and is the focus and vehicle for her practice-as-research.

Drawing upon Vivian Sobchack’s notions of “ultra-hearing” and “ultra-seeing” (a re-interpretation of Bachelard’s sensory hierarchy), this paper explores the possibility and nature of moving from the ‘work’ (in electroacoustic musical and contemporary choreographical senses respectively) to an intermedial conception of a multisensory and ‘live-digital’ ‘event’ which moves from, through and beyond the ‘concrete’, towards a rhythmical space that is, in the words of Don Ihde ‘a deliberate decentering of (the) dominant tradition(s) in order to discover what may be missing’ (1976:14). The authors’ investigation into the taxonomies between sonic worlds, image generation and movement making, in a recent and on-going collaboration, therefore engages in the imaginative potential of an ‘event’ (in Massumi’s terms) where the modulation of acousmatic sound, image and movement becomes enlivened beyond the fixed dimensions of each respective discipline. Moreover, besides exploring the potential

connections between sound, image and the body, the authors have been searching for a way to create environments that stimulate poetic relationships beyond the normal compositional opportunities afforded by each of their respective areas. This has encouraged a situation where technological and technical processes leads one to respond to the qualities of things, which in turn has encouraged an epistemology of materiality – not fixed in form – but open to the nuances that flow between them. Indeed, in terms of the integral nature of ‘fixing’ movement and image qualities in determining the nature of the ‘live’ or ‘performative’, there have emerged some interesting connections with post-Schaefferian musical practice. As Hansen describes, “At the heart of this endeavor is a conviction that today’s microtemporal digital technologies do not simply impact human sensory experience from the outside, but rather materialize a potentiality that characterizes sensory experience from its very origin...”

(2011:105). In consequence, a central concern has been how each of the constituent parts of the unfolding ‘event’ can then remain in flux, or better said remain *un-fixed* (the term ‘event’ and not ‘work’ is used purposefully here to avoid the idea that what is created is a fixed piece of work) in order to tap into sensory experience proper. Parallels relating to affect, interpretation and meaningfulness between electroacoustic and live-digital dance practices and audience experiences will be drawn. Notions of intimacy, central to this ongoing work, will be explored in relation to the conference theme; that is to say, between ‘live’ and digital, between eye and ear, between movement and digital image, and between performance and intermedia ‘environment’ and audience. Given the centrality of space as well as temporality in this endeavor, the authors continue to explore *where* such practice should happen; it seems already not in the concert hall or traditional dance venue...

Selective bibliography:

Hansen, M. (2011) ‘From Fixed to Fluid’. In: *Releasing the image. From literature to new media*. Eds: Jacques Khalip and Robert Mitchell. California, Stanford University Press.

Ihde, D. (1976) *Listening and Voice: A Phenomenology of Sound*. Athens: Ohio University Press.

Manning, E. (2009) *Relationscapes: Movement, Art, Philosophy*. Boston, MIT Press.

Massumi, B. (2002) *Parables for the Virtual : Movement, Affect, Sensation*. Duke University Press.

Massumi, B. (2011) *Semblance and Event : Activist Philosophy in the Occurrent Arts*. Boston, MIT Press.

KEYNOTE LECTURE

SOUND SPACES: COMPOSED OR INSTALLED.

SIMILARITIES AND DIFFERENCES OF AESTHETIC CONCEPTION

Helga de la Motte-Haber

Sound is a flying temporal phenomenon. By travelling through the air pressure of a place, it always bears spatial qualities communicating the distances and positions from which it is coming. Sounds, as such, have spatial attributes by their different volumes, densities or heights. Therefore, space is inherent in any music. Even if composers of traditional music don't use a 'Fernorchestra', they take spatial qualities into consideration with varying degrees of intensity. However, modern technological development has facilitated the distribution of sound in space. A lot of new genres have arisen, which use a spatial treatment of sound. The special theme of the conference Beyond Concert Performances motivated me to compare electroacoustic music with sound installations for several reasons. At first glance these two genres seem to be very different, one being more related to music and the other being situated between visual art and music. However, both are time and space based phenomena, and therefore they have a great deal in common. In short, here is an enumeration which had to be elaborated in a more detailed form:

The development of sound installations gained a lot from the spatial distribution of music. Often sound installations are included in festivals of electroacoustic music. Both have to use public address systems. Composers quite often work in both fields. There have been combinations of a performance with an installation, by which the installation, as such, seemed to be a concert with a long duration. A new form arose; the concert installation.

This talk should also have a look back at the common history of electroacoustic music and installations (e.g. the Philips Pavilion, the Polytopes). Questions should be discussed. How site-specific should a sound installation be, and how are electroacoustic works fitted into a special room? Some recently developed ideas, such as immersion, being in a situation etc., reflect the presence of the audience in an artificially shaped environment. They should be mentioned as an overview of a possible enlargement of aesthetic thought.

Helga de la Motte-Haber (1939) studied psychology and musicology, and has since the seventies lectured about Sound Art. She was a pioneer in her field and contributed to shifting the focus of musicology towards contextualisation and the surroundings of sound. In the 90's she began researching on music compared to other art forms. From 1978 - 2005 she was professor for Systematic Musicology at the TU Berlin. She is cofounder of the German Society of Musicpsychology, and author/editor of several books like Handbuch der Systematischen Musikwissenschaft (5 Bände), Klangkunst (= Band 12 des Handbuch der Musik im 20. Jahrhundert) oder Musik und Bildende Kunst.

LOCATED: JIB GNS
TUESDAY, JUNE 10, 8:30PM

KEYNOTE LECTURE

THE DEADLY EMBRACE BETWEEN MUSIC SOFTWARE AND ITS USERS

Miller Puckette

One of the many differences between software instruments and physical ones is that software instruments, since they deal in information instead of physical vibrations, can operate in ways that are indirect to the point of being mysterious. Software in the past half century has rapidly increased in complexity and decreased in stability. This raises problems for both designers and users of software intended for musical creation. Specific pieces of computer-mediated music can easily become impossible to perform within a decade of their creation. More broadly, musical practices can easily become embedded in specific software configurations and hard to study from vantage points other than the creator's chair. What one musician can learn from another one can

be limited by incompatible differences between the software paradigms they favor.

Although the software designer strives to make software as open and transparent as possible, this transparency is always limited by competing exigencies for efficiency, "power", and sometimes a commercially imposed need for secrecy.

While music software can give the musician great power, its users should stay aware of the risks that can accompany its great and largely hidden complexity.

Miller Puckette obtained a B.S. in Mathematics from MIT (1980) and Ph. D. in Mathematics from Harvard (1986). He was a member of MIT's Media Lab from its inception until 1987, and then a researcher at IRCAM (l'Institut de Recherche et de Coordination Musique/Acoustique), founded by composer and conductor Pierre Boulez. At IRCAM he wrote Max, a widely used computer music software environment, released commercially by Opcode Systems in 1990 and now available from Cycling74.com.

Puckette joined the Music department of the University of California, San Diego in 1994, where he is now professor. From 2000 to 2011 he was Associate Director of Center for Research in Computing and the Arts (CRCA) at UCSD.

He is currently working on Pure Data ("Pd"), a leading open-source real-time multimedia arts programming environment, with software contributions by many others worldwide. Puckette has collaborated with many artists and musicians, including Philippe Manoury (whose Sonus ex Machina cycle was thie first major work to use Max), and Rand Steiger, and Vibeke Sorensen (as part of the Global Visual Music project). Since 2004 he has performed with the Convolution Brothers.

LOCATED: TU BERLIN, MAIN BUILDING, H1012 (2ND FLOOR)
FRIDAY, JUNE 13, 8:30PM

NOTE ON SOUND INSTALLATIONS FOR EMS14

This year's EMS conference focuses on »Electroacoustic Music Beyond Concert Performance«, a field of research and artistic practice that seems to ask for an accompanying music program not bound to the established concert setting. We therefore decided to present two permanent sound installations by Bernhard Leitner, located in the Technical University Berlin main building (Ton-Raum, 1984 and HörSaal, 2010), and to put out a call for sound installations to be presented at University of Arts, Einsteinufer, Room 112. The latter installations are intended to run continuously for five hours on one day during the conference. No performers (musicians, dancers), no visual or sculptural elements including furniture, projection or special light setup will be employed. Up to 12 speakers and up to one subwoofer are provided and may be used. The speakers are to be placed on their designated stands or on the floor.

The EMS14 Organizing Committee chose three pieces from some forty proposals for realization. We are excited to present three pieces that cover a wide variety of approaches in terms of aesthetic and technique and hope to help in establishing an artistic addition to the conference's scholarly discourse.

The installations are funded by the Electronic Music Studio of Technical University Berlin and produced in collaboration with the University of Arts, Sound Studies program. We would like to thank the artists, the EMS committee, our colleague David Ackerman for the production's technical supervision, and Manfred Fox for looking after the Ton-Raum.

Volker Straebel and Andreas Pysiewicz
Technical University Berlin
Electronic Music Studio, Audio Communication Group

SOUND INSTALLATIONS

CIRCLE_OF_FIFTHS

Hans W. Koch

At the core of the installation lies the concept of the traditional circle of fifths: a theoretical “thought-space” in circular shape, which describes the tonal and functional relations of music in standard western 12 tone equal temperament. The installation translates this theoretical space into a real space via a circle of 12 loudspeakers, each projecting one pitch class only and ordered according to the circle of fifths. a special digital filtering algorithm is used to separate musical or sonic material into these 12 pitch classes across several octaves (8 - 9). while the 12 resulting tracks contain each one pitch class only, their ensemble still can recreate enough timbral information to allow the identification of individual instruments.

In the resulting sound field, melodies jump between loudspeakers, harmonies are fanned out, centers of tonal gravity aggregate in sections of the circle.

Of equal importance is the position of the listener within the circle: in the centre all loudspeakers are perceived with approximately the same loudness and the result could be described as a sonification of functional relations within the projected musical material. Being very close to one loudspeaker, one pitch class only is audible across several octaves. navigating between those two extremes results in a shift in the perceived loudness-relations of the individual pitch classes, which “disturbs” the sonic image and alters the perception of the music.

in its recent form, the installation combines known musical material (because of their chromatic subject, the canons from bachs “musical offering” lend themselves particularly well for such analytical treatment) with sonic material stemming from field recordings or the live feed of an open microphone in the surroundings of the location. The process of “tonal rasterisation” of real-world continuous sounds articulates the circle_of_fifths in an altogether different way, shifting the focus of perception from “primary” features of the source material to its inherent, but hidden tonal relations and movements. The resulting sonic image could be compared to stripe photography.

Even if the traditional circle of fifths lies at the roots of the work, it is possible to think about a transposition to different tunings with more or less pitch classes or altogether different forms of functional relations. What really matters here is the concept of directly deriving a spatialisation from inherent properties of the musical material.

The first installment of the work was presented in 2006 at the voorkamer artist’s initiative in lier/belgium.

Hans W. Koch (cologne), is active as composer, performer and soundartist.

He considers art sculpting thoughts in different materials and personally favours conceptual approaches: more thought, less material. Exploring (de)faults of soft- and hardware results in the use of computers as musical instruments in a rather physical manner.

His works have been commissioned by and presented at numerous festivals and occasions both nationally and internationally. In 2008 his piece “the benchmark consort” won an award of distinction at the ars electronica festival in linz/austria. since 2012 he teaches hybrid sound composition at the institute for music and media in duesseldorf.

www.hans-w-koch.net

LOCATED: EIN 112
TUESDAY, JUNE 10, 5 - 10PM

N.N.

Thomas Ankersmit

This 8-channel sound installation is exploring the rarely experienced phenomenon of “otoacoustic emissions”. These are a kind of “phantom sounds” that are actually produced by the listeners’ ears themselves, in response to certain stimulus sounds that I create.

Discovered by physicist Thomas Gold in 1948, otoacoustic emissions (or “ear-tones” as American composer Maryanne Amacher used to call them) are sounds which are generated from within the inner ear, in response to certain stimulus tones. Otoacoustic emissions are “ghost sounds” in other words: sounds that are not present in the signal that comes out of the loudspeakers, but that are actively created by the ears of the listeners themselves, like sonic hallucinations.

Specifically, ear-tones are generated by the simultaneous presentation of two sinusoidal tones at a small interval, which then trigger the generation of a third tone inside the cochlea, the spiral-shaped cavity deep inside the human ear. The stimulus sounds coming from the loudspeakers and the ear-tones can also form two distinctly separate musical streams; two voices, one “outside” and one “inside” of the listener.

In combination with “normal” sound originating outside of the listener’s ears this creates very interesting possibilities for sound localisation; for a sound that is sometimes outside and sometimes inside of the listener, or appearing to come from far away while at other times literally coming from inside the listener’s head.

In this piece I will focus on these three unique characteristics of ear-tones:

- Composing sound-forms that take place and move between the inside and the outside of the listener’s heads
- Creating perceptual contrasts between the unique sensation of ear-tones on the one hand, and “conventional” sound on the other hand; including the possibility of moving these elements around the performance space using an octophonic speaker setup
- Creating sound-fields in space that the listeners can move around in, where each individual will have a different sonic perspective and a highly subjective experience

The work will be acoustically site-specific, and I will be tuning certain frequencies to the dimensions and acoustic behaviour of the room.

Thomas Ankersmit (1979, Leiden, Netherlands) is a musician and installation artist based in Berlin. Since 2006 his main instrument, both live and in the studio, has been the Serge analogue modular synthesizer. Acoustic phenomena such as sound reflections, infrasonic vibration, otoacoustic emissions, and highly directional projections of sound have been an important part of his work since the early 2000’s.

His electronic music is also characterized by a deliberate misuse of the equipment, using feedback and disruptions in the signal to create dense but finely detailed swarms of sound. Recent projects include a radio piece based on the acoustics of abandoned radar domes with Valerio Tricoli, recording sessions with Kevin Drumm at GRM in Paris and with Tricoli at ZKM in Karlsruhe, a new Phill Niblock composition for Serge synthesizer, and all-analogue quadraphonic music for the historical Serge and Buchla synthesizers at EMS in Stockholm.

His music is released on the PAN, Touch and Ash International labels. Ankersmit’s sound and installation work has been presented at Hamburger Bahnhof, KW and Berghain, Berlin; Henie Onstad Art Centre, Oslo; Kunsthall, Bergen; Kunsthalle, Basel; CAPC Musée d’Art Contemporain, Bordeaux; Arnolfini, Bristol; CCA, Glasgow; MoMA PS1, New York; Paradiso and Muziekgebouw aan ’t IJ, Amsterdam; REDCAT, Los Angeles; Serralves Museum, Porto and at festivals for experimental and contemporary music all over the world.

He has also been a guest lecturer at universities such as Columbia, Harvard, CalArts and the Universität der Künste in Berlin.

LOCATED: EIN 112
WEDNESDAY, JUNE 11, 5 - 10PM

REFLEXION: SITE-SPECIFIC SOUND INSTALLATION FOR SIX GLASS WINDOWS

Luc Döbereiner

Sound is always spatial, but in its status as a temporal phenomenon it is also an overcoming of space. Sound carries the properties of the space in which it sounds and the resonating object from which it emanates, yet it also overcomes the spatial extensional objectivity in which it is created, by becoming an event. Sound is thus not merely movement (spatial displacement), but by moving back and forth (oscillating) it emerges as an ephemeral temporal event bearing the traces of the space that it overcomes/sublates. As the philosopher G.W.F. Hegel already remarked, sound is located precisely at the gap between spatial objectivity and temporal subjectivity. The sound installation

Reflexion proceeds from the assumption that a sound event sustains itself by reflexion, i.e. by referring to itself, by echoing and resonating with(in) itself. A sound event is thus the point of emergence of interiority out of mere spatial exteriority; it is the creation of an identity through vibration, oscillation as a movement of self-referral. Sonorous reflexion (feedback) creates an inside and an outside by encountering itself as other. The site-specific sound installation Reflexion is based on a very specific sonorous spatiality, that of solid objects, i.e. it explores solid objects as sonorous spaces. Using exciters (loudspeakers for structure borne sound) and contact microphones, sonic feedback is created within the six glass windows of the room in the Einsteinufer. Sound is thus created out of nothing, by self-reflexion, however instead of using air as the medium of sound, glass, that translucent and reflective solid material, which marks inside and outside, is used as an oscillating membrane in order to create a sonorous interiority, a musical-gestural and timbral identity. The solid body thus becomes the primary space and sound medium. The six windows, which are creating sound via feedback,

are connected to each other through a computer system developed in the audio programming language SuperCollider. The system partly transforms the input signals again before feeding them back into the glass membranes using a variety of digital feedback processes, such as nonlinear equations as well as delays and filters in order to create a long term memory and control-level feedback leading to complex and interdependent behavior. Sound is thus multiply reflected, in a physical body, in a digital feedback system, and through the air mediated space of the room itself.

*Luc Döbereiner (*1984) is a composer and researcher from Berlin. He studied at the Institute of Sonology in The Hague and holds a doctoral degree from the University of Music and Performing Arts Graz. His work is concerned with compositional models and explores the relation of the materiality and the ideality of sound in musical composition. His artistic thought is constituted in the oscillation between aesthetic theory, technological development, and compositional practice. Döbereiner has published articles in journals such as Computer Music Journal, Contemporary Music Review and kunsttexte.de. His compositions have been performed by ensembles such as unitedberlin, Sond'Ar-te, Modelo62 and by players such as Frank Gutschmidt, Martin Lorenz, Akane Takada, and Karolina Öhman. His works have been performed and presented among others at CTM Berlin, the ISEA, ZKM Karlsruhe, Make Art Festival Poitiers, on Deutschlandradio Kultur, Computing Music Cologne, in the Maison de la Radio Geneva, the Goethe-Institute Lisbon, and the Gare du Nord Basel.*

LOCATED: EIN 112
THURSDAY, JUNE 12, 5 - 10PM

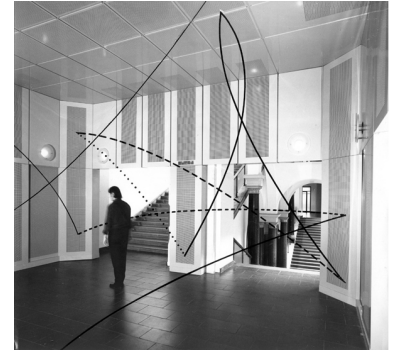
TON-RAUM TU BERLIN (1984) [SOUND SPACE]

Bernhard Leitner

The TON-RAUM TU BERLIN was completed in the spring of 1984 and is the award-winning project in an international art-on-architecture competition. The cubic, static metal architecture, in which walls and ceiling are equipped with 34 broadband and 18 high-frequency loudspeakers, is the supporting construction for dynamic, sound-sculptural spaces. The perforated metal surfaces are a kind of acoustic-transparent skin. On the one hand, the insulating material layered behind it greatly reduces the reverberation period.

On the other hand, the sounds are projected into the space from loudspeakers that are arranged on all sides in places indeterminate for the eye. The architecture becomes the instrument for composing immaterial time-spaces. Here sound is the sculptural, form shaping material. Sound is the building material for spatial configurations such as serpentine interweaving, soft walls, rhythm space, kneaded space, tingling space, tensions, time-vaults and arches, breathing space, twitching space, billowing space, water cube, wafted space.

At specific times of the day sound spaces are retrieved from the stored memory menu, infusing an ever new presence into his architecture. The TON-RAUM is installed in the staircase of the main building of the Berlin Technical University.



LOCATED: TU MAIN BUILDING, STAIRCASE
FRIDAY, JUNE 13, 7- 8:30PM

HÖRSAAL. EINE WELLENFELD-INSTALLATION (2010) [A Wave Field Installation]

Bernhard Leitner

Florian Goltz, audio programming

HörSaal (in German – a lecture hall, auditorium, a hearing hall) is a site-specific soundspace installation. The medium is the audio playback system with 832 channels installed in the lecture room H104 in the TU (Technische Universität) Berlin. The composition of dynamic and static sound spaces makes use of this technology (Wave Field Synthesis).

In contrast to a concert-type usage of the space with strictly arranged rows of seats (for a lecture), HörSaal is conceived as a freely accessible sound-space composition.

In the dynamic parts (sound material: aurally agitated, echoed rustling and sighing) sounds are moved between ten abstract sites. These sound-locations are programmed and mapped out not only within the visible space, but – in the acoustic and virtual dimension – outside it as well. This movement is overlaid by a movement with a different progression between the abstract locations. Both of these are yet again overlaid with a third and fourth level of varying movement structures in the space. The complex space texture suggests a drifting, aleatory wind-blown space, whereas it is an exact, controlled composition of form.

In the static hearing space (sound material: speech) the listener wanders through various places in the hall, which are indicated visually by the installation of staves, 2 m high and painted red. Out of a diffuse noise pervading the total space and assembled out of twelve different speech channels we step into precisely defined sound sites, extremely individual hearing spaces, where we experience the sound-world of words spoken by the physicists Planck, Schrödinger, Einstein, Meitner, Hahn, Pauli and Heisenberg.

Bernhard Leitner born (1938) in Feldkirch, Austria.

Studied architecture at the Technical University of Vienna and Paris. In 1968 he moved from Vienna to New York. Urban Designer in the New York City Urban Planning Office and Associate Professor, New York University (1972 - 1981). Afterwards he moved to Berlin and held an Univ. Professor (1987 - 2005) in media design at the University of Applied Arts in Vienna

LOCATED: TU MAIN BUILDING, WELLENFELD H 104 (GROUND FLOOR)
FRIDAY, JUNE 13, 7- 8:30PM

