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AUTHOR INFORMATION (FOR EACH AUTHOR)

Name: Pia Palme

Affiliation: Centre for Research in New Music, Department of Music, University of Huddersfield

Email: piapalme@aon.at

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The Politics of Resonance

Pia Palme Centre for Research in New Music University of Huddersfield Yorkshire | England

piapalme@aon.at

Abstract

'GIB SIE WIEDER'¹ is a series of two political compositions, dedicated to exceptional performers Garth Knox (viola d'amore) and Rhodri Davies (harp). In this project the central focus is on resonance in both a musical and wider socio-cultural sense. Finding the term closely correlated to the construction of gender, I direct my inner ear to the hidden background noises of the organisation of society. As a woman and composer, I perceive aural patterns of individual and political significance. In this work my aim is to to deconstruct engrained structures of resonance and assumptions of gender, and redefine them from a personal perspective as the basis for a new compositional identity. In this article, I identify my political perspective as an artist, and describe how this affects and stimulates my creative process. I discuss the compositional approach taken in the two compositions making up 'GIB SIE WIEDER' and their public performances in 2014.

Introduction

'GIB SIE WIEDER' began with the composition 'a warning commentary on resonance I', featuring Garth Knox performing on viola d'amore (see Figure 1). The second piece 'a warning commentary on resonance II' followed shortly afterwards and is dedicated to the harpist Rhodri Davies (see Figure 2).



Figure 1: Garth Knox performing from an audio-score.



Figure 2: Rhodri Davies rehearsing using goose feathers rotating on electric milk whisks.

Acoustic and social aspects of resonance

Resonance became the focus of this project because of the acoustic characteristics of the instruments involved, the viola d'amore and the harp. The notion of resonance is found in the fields of music and acoustics, as well as in social behaviour. Through my research into resonance as an acoustic phenomenon, I was drawn to the simple fact that a vibration (e.g. of a string) is excited by an impulsive function, which is then filtered by the specific resonant qualities of the respective instrument. A finger plucks a string of the harp, or an articulation with the tongue excites the air column in the contrabass recorder (my own instrument): the impulse theoretically contains all frequencies, and acts as a wide-band noise excitation (Benade, 1976, pp.32-34). The resonant qualities of the instrument cause a progression from transient noise to pitched sound.

Social resonance, on the other hand, describes a state of being when individuals, engaged in face-to-face communication, feel strongly connected. It embraces a number of phenomena in human interaction that go beyond a mere exchange of information. To communicate successfully human beings coordinate behaviours, beliefs and attitudes. Social resonance depends on generating emotion, openness and availability (Kopp, 2010, p.587). These qualities are traditionally connected with women in many societies. According to Mary Beard (2014), women's resonance is at the same time connected to their public silence. When one talks about 'sympathetic' or 'forced' resonance in music, social concepts or metaphors are transferred into acoustics. The notion of acoustic resonance implies that a sonant factor - an actively sounding agent, an impulse - happens, before re-sonance will follow and respond. These properties of sound production can be correlated to assumptions of active and passive roles and gender stereotypes in society.

Both the viola d'amore and the harp are historically associated with and connected to the social positions and role models of women. In the European conservatories of the 19th century, women were only permitted to study the harp, the piano and the voice (Bennett, 2008, p.59). This historical resonance persists today. As a result, harpists were among the first female musicians to be hired in professional only-male orchestras, like in the Vienna Philharmonic Orchestra in 1997 (Bennett, 2008, p.53). Instrument makers historically had a preference to decorate such instruments with female figurines or heads (see Figure 3). In the case of the viola d'amore, these figurines were at times blindfolded. The resonating strings are often referred to as 'sympathetic strings'. The viola d'amore was frequently used in feminine contexts, or in connection with female main characters, by (mostly male) composers such as Leoš Janáček, or in Bernhard Herrmann's film music.²



Figure 3: Historic viola d'amore owned by the company Thomastik-Infeld in Vienna.

In contemporary works, the sound of the resonant strings is often amplified or electronically processed. The Austrian composers Olga Neuwirth and Georg Friedrich Haas have made musical resonance a theme of their works for viola d'amore. Neuwirth (n.d.: 2) states that her piece for viola d'amore deconstructs and re-invents the aura of the instrument. In my piece, the intention was to move beyond these acoustic characteristics of the instrument. I wanted to work with the underlying structures and

the social perspectives of resonance which I observed in my research. In particular, I reacted strongly as an artist to the aspects of gender construction surrounding the instrument. I felt challenged as a female composer to make the political aspects of resonance a theme of a composition.

Feminist musicologist Susan McClary has explained, how music - including contemporary music - reproduces social patterns, especially those of gender (McClary, 2002, p.53). To take this argument further, I argue that it must be possible to compose music which aurally re-organises social patterns into a new design. In my project 'GIB SIE WIEDER' I propose that the compositional and technical methodologies employed articulate a clear political statement.

Political perspectives of music and composition

In an interview with Abigail Heathcote (2010, p.341), Helmut Lachenmann stated that composing "always has a political aspect". Beyond this general remark about the significance of an artist or composer participating in a given culture, there are more particular and personal implications, when doing so as a female artist and composer today. My own experiences and long-term examination of issues surrounding gender roles, conflict and political power in acting as a woman artist within an international context, have heightened my awareness of one's responsibilities to art as a political practise³. I find it necessary to question ingrained assumptions about how hierarchies of power are associated with aspects of gender including music (or, more particularly, contemporary music) and composition, which in my experience, mirror the overall situation to be found in society.

In the context of this project I want to define the term political⁴ through drawing on the work of the German political scientist Max Weber. He identifies politics in a wider sense, as any kind of activity assuming leadership in a society (Weber, 1919, p.3). Assuming that leadership is necessarily, but not exclusively, connected to power, Weber compares political action to drilling holes slowly into boards of hard wood. This action requires exertion, passion and a sense of proportion (Weber, 1919, p.66). He asserts

that, aside from strength and power, political action benefits from a patient and somewhat contemplative attitude.

As a female/feminist composer I perceive my ongoing artistic practice in a very similar way. I actively participate in society and my work as a composer is embedded into daily life. There is a constant fluid exchange between what I perceive happening around me, in my environment, and the more autonomous and personal focus of my artistic process. What I think as a female, composer, and member of Western European society radiates out into all my activities. In my case, composing is the most profiled political aspect of my work.

I also find it helpful to balance artistic work with a contemplative approach. Listening deeply, I open my senses to everyday life and, if possible, without immediate judgement. Activating the inner ear, I hear that every social structure, such as a relationship between two people, a family, a school, workers in an office, a busy shopping centre, a city, emits its own noisy ambience, and in doing so affects my individual existence and identity (Barbezat and Bush, 2013, p.148). The background noises of structures and systems often remain unnoticed because of their ongoing nature. I refer to hearing and listening in this context because these perceptions best describe my observations. For me, these sensations occur on a bodily level and reinforce the visual - a faculty which, in my case as a woman in a patriarchal society, has been trained by the need to read between the lines and notice the unspoken (Connor, 2014, p.1). I particularly notice the systemic noises of social interactions and gender roles. As an artist, I find myself creatively drawn to the hidden patterns in this systemic noise. In my recent works I have sonified and rendered these background noises audible.

Re-claiming resonance as a composer

The main artistic agenda of the 'GIB SIE WIEDER' series was to re-define and recompose the notion of resonance from acoustical, musical and social perspectives. To achieve this, I use a number of compositional strategies and tools. To overturn habitual concepts about resonance, I use electronics, which include:

- an electronic track (playback) including a vocal part;
- vibration speakers (exciters) for amplification;
- a sounding object (installation) on stage instead of loudspeakers;
- transduction of sound via exciters into the sounding object (or into the harp).

To allow the emergence and re-organisation of new patterns, I use these compositional approaches:

- parts developing in a crosswise fashion counter-movements;
- audio-scores (transmitted via headphones);
- written scores;
- instructions for improvisation;
- merging and interference of different score designs;
- extended instrumental techniques (feathers as tools for sound production).

To include the level of verbal communication and the female voice, I compose:

- text;
- vocality and text performance (as playback).

Multiple layers provide the means to sonify and articulate the complex flow of social patterns, which I describe above. Each type of score and every approach has a conceptual function in the composition and performance plan. The individual layers sometimes act independently, sometimes move together, or merge, or interfere with each other. For an overview of details, see the the chart below (see Figure 4).

GIB SIE WIEDER music and text by Pia Palme 2014			
subtitle	a warning commentary on resonance I	a warning commentary on resonance II	
instruments	viola d'amore, contrabass recorder	harp	
tools for instrumental performer	headphone for audio-score, feathers, stopwatch	feathers, 2 milk whisks, stopwatch	
score notation and structure	4 separate parts: part 1: viola d'amore, directed by audio-score part 2: viola d'amore, directed by written score and audio-score. part 3: viola d'amore/contrabass recorder with transformed playback, improvisation + directed by audio-score part 4: viola d'amore with transformed playback, directed by audio-score	1 part live performance: harp with transformed playback, directed by written score recordings: harp directed by written score-modules	
compositional details	Instrumental part and electronic part in juxtaposition, moving in a crosswise compositional direction. Mixing of written score and audio score: Part 2 separates the actions of the two hands; a written score notates the movements of the hands introducing two compositional threads/two staves, which should be performed independently, and with different timing: - The right hand has to follow directions from the respective stave for sonic and rhythmic-material, always on empty strings. It is timed exclusively by audio-score (with the exception of one instant in the piece). - The left hand features left hand finger work only, and is timed by a time-line/stopwatch. Left and right hand move in opposite direction crosswise over the strings during the duration of the piece: the right hand from lowest string to highest, left hand from highest possible sounds to lowest, with a slight change at the end. Scordatura: D-major	Two parts in juxtaposition, developing in opposite direction:-'Outer' harp starts with noise produced with feathers to pitched sound-production'Inner' harp, i.e. playback moves from feedback sounds and pitched sound-production to noises produced with feathers on the harp, and vocal noise. Scordatura 'outer' harp: $F e , G e $, A $ e $ are tuned to E $ e $ with slight microtonal variations Scordatura 'inner' harp: A $ e , B \ensuremath{b}, C \ensuremath{b}$ are tuned to G $ e $ with slight microtonal variations	
electronic setup	for live performance and transformed playback/ transduction: computer, RME-Fireface, Ableton Live pickup under on resonant strings of viola d'amore for live transduction, multiple-channel headphone amplifier (for audio- score and speaker pre-amp)	for transformed playback/ transduction: computer, RME-Fireface, Ableton Live multiple-channel headphone amplifier (speaker pre-amp)	

electronic composition and audibility, sound- transformatio n	 audio score - parts one and two audible only for performer via headphones: part 1: processed and edited recorded music, originally performed with contrabass recorder; part 2: text, performed by myself. transformed playback- audible for audience via object parts 3 and 4: vocal part, text-performance by Claudia Cervenka. sound-transformation via transduction: playback is altered through transduction, a wooden box acts as an effecting device. 	transformed playback - audible for audience via harp, composed with: a part for harp with special scordatura/written score; a vocal part with text and instructions/performance and improvisation; feedback sounds, noises performed with contrabass recorder sound-transformation via transduction: playback is altered through transduction, the sound board and body of the harp act as effecting devices.
speaker setup & sounding object/ installation	2 vibration speakers (ompere dancer), invisibly fixed on the back of an installation = sounding object assembled on stage, with an empty wooden box (lid open and closed by myself during performance), white packing-paper and goose feathers	2 vibration speakers (ompere dancer), visibly fixed to the harp = sounding object directly on the soundboard with suction cups, left and right close to bottom end
performers involved	on stage: Garth Knox, viola d'amore Pia Palme, electronics and contrabass recorder in playback: Claudia Cervenka, voice	on stage: Rhodri Davies, harp in playback: Gabriela Mossyrsch, harp Pia Palme, sounds and noises Claudia Cervenka, voice
duration	app. 16 minutes	12 minutes

Figure 4: Chart of project details

The conceptual approach I adopt starts with the very title of the work, 'GIB SIE WIEDER', which quotes part of the opening line of a popular German nursery rhyme, "Fuchs du hast die Gans gestohlen, gib sie wieder her!" The complete line translates as "Fox, you have stolen the goose, give her back again!". The German song was first published in 1824 with the subtitle "A warning" (Anschütz, 1824, p.38). I liked the assertiveness of the farmer's command to return what has been wrongly taken away⁵. Omitting the last German word 'her', I twist the meaning of the original German, so it can be rendered 'play her back' in the sense of 'echoing'. I also adopted the subtitle 'a warning commentary on resonance' for the two pieces of my project. The image of the goose and the white feathers of its wings provided further inspiration regarding extended instrumental techniques, as will be discussed below.

Electronics play a central role in my project. Precise techniques support my compositional strategies. In the work for viola d'amore the resonant strings are amplified with a pickup device underneath the strings. However, the amplified signal is not sent to a conventional speaker arrangement for concert presentation. Instead, I place a sounding object on stage which resonates. By using this object I turn resonance into a tangible thing rather than projecting it as a passive component in the concert space that surrounds and supports the central agent - the viola d'amore. Resonance is transformed into an object on stage which is present and perceptible for the audience. The relationship between the instrument and its resonance (like that between male and female) is rebalanced through the physical manifestation of resonance in the concert space.

Having researched various technologies, I decided to install vibration speakers (or exciters) onto the instrument itself. Exciters work by stimulating the resonant qualities of an external material or object - this exactly fits my concept here. Exciters have existed for some time (used mostly in cars, or movie theatres). Recently they have become easily available and affordable as a means for portable amplification. Exciters have been used by various artists for a diverse range of projects. One such examples is the sound artist Kaffe Matthews who created a huge wooden replica of the bottom part of a giant violin and which offers space for people to lie down directly on the wood so directly experiencing the vibrations caused by sound as if being inside the body of a violin. Sound is transmitted through vibration speakers attached to the bottom of the sculpture⁶. In the context of composed contemporary music, the piece 'Stern' for electric violin and grand piano by Austrian composer Karlheinz Essl⁷ features an exciter inside the piano.

For my project, I looked for two small and light exciters which are easy to transport and can be quickly mounted to an instrument or an object. I conducted successful experiments with the model 'Dancer' made by the ompere-company⁸. I examined the resonant qualities of different materials and objects as well as how and where to mount these speakers on instruments or objects. For the piece with the viola d'amore, I

created a sounding object from a beautifully crafted old wooden box, paper and feathers. The exciters are fixed invisibly to the back of the box. The amplified resonant strings of the viola d'amore are transduced (via live electronics, computer and sound-card) into the box, throughout the entire piece, turning the sculptural assemblage into a sounding object. The paper element of the sculpture (see Figure 5) that reaches from the bottom of the box to the floor, appears to vibrate. The wooden box acts as a lo-fi effects unit: it colours the sound. Furthermore, by opening and closing the lid, I can vary the resonant frequencies produced.



Figure 5: Live-electronics and sculptural object for 'GIB SIE WIEDER' (part 1 for viola d'amore).

In the case of the second piece for harp, *a warning commentary on resonance II*, I experimented with mounting exciters directly onto the instrument. I wanted to find out whether it would be possible to transduce a recording of harp sounds into the body of the harp. Following several positioning tests, I decided to use two speakers mounted on the soundboard of the harp via suction cups, in a symmetrical position, because I wanted the complete body of the harp to vibrate, in a 'stereo' manner⁹. If playback is started, the harp appears to play by itself - as if activated by an 'inner' harpist. The harp

now functions as a sounding object, in addition to a musical instrument (see Figure 6). If a performer plays live, as an 'outside' harpist, in addition to the 'inner' part, the resonant frequencies caused by the electronic track and by the live performance radiate together from the same source, and also directly interfere with each other. As with the box, the sound of the playback is slightly transformed by the resonance of the harp.



Figure 6: harp and speaker setup for performance.

Another important technique used in 'GIB SIE WIEDER' is the audio-score. In the first of the four movements of the piece for viola d'amore, the performer follows an audioscore¹⁰. This audio-score comprises a highly processed contrabass recorder piece which I wrote and performed. Whilst listening to the sound file through headphones, the performer is required to re-perform as precisely and as accurately as possible what he is hearing but mediated through his own instrument (see Figure 1). This performance setting foregrounds the topic of resonance which I seek to redefine. Through the audio-score, the active performer - sonant - steps back into the role of a resonant medium. Aurally hidden from the audience and only audible for the performer, the audio-score activates the performance like a remote control device¹¹.

In the second movement, I work with both a written score and an audio score. In this compositional setting the audio-score interferes with, filters and disrupts the authority of the written score. The audio-score is a text spoken by a female voice. The viola d'amore player reads from a two-stave written score while listening to the audio-score. The two staves notate the right and left hand separately, while the audio-score directs the timing of the right hand's bowing action. The instruction given to the performer is that they should bow only when text is spoken. The precise sound-material is given in the written score, changing over time (the overall timing is governed by a timeline and stopwatch). The idea behind this setting is that a hidden female voice directs the right hand - the bow appears spellbound.

In the last two movements (parts 3 and 4), the audio-score is amplified via transduction into the sounding object. It is now audible for the audience. The audio-score that is played back is a vocal text performance which as well as being audible functions in addition as an input to musical action, in this case, improvisation. Again, playback is acoustically transformed through lo-fi effects by the box, resulting in a hollow, woody vocality (see Figure 7).

One of the main compositional procedures of this series is that selected parts are developed in counter-movements, or progressing crosswise in opposite directions. This compositional tool allows parts to emerge, while others (formerly dominant forms and patterns) recede. In the piece for viola d'amore, I pair off the instrumental part with the audio-score in such a fashion. The instrumental part progresses over four movements, from sonic production to barely audible gestures (soft noises produced with feathers) at the end. The audio-score develops in the opposite way. Starting from a hidden nonverbal input heard only by the performer and becoming increasingly foregrounded until it becomes a clearly audible female voice on stage.



Figure 7: Sounding object for the transduction of the viola d'amore.

The 'crossing over' is also played out in the viola d'amore part. It governs physical movement in the second part of the work. The right and left hands of the performer move in contrary motion across the strings and the instrument. The left hand is reduced to the production of pizzicato and slap sounds, while the bow mostly operated on open strings. Except for a brief instant in the middle section, where both hands perform together, the right and left hand move in a direction of their own.

In the second piece of the series for harp, the setup on stage is simpler in appearance. There is a conventional written score for the performer placed on a music stand. However, I have actually composed a duet for two harpists, an 'outer' and an 'inner' performer. There is a juxtaposition of the live performance and the playback track (via transduction into the instrument). The 'inner' part was recorded by the harpist Gabriela Mossyrsch in a studio in Vienna. Both parts require a different scordatura (see Figure 4 charts). The 'outer' part moves from noise to (pitched) sound-production, while the 'inner' part develops in the opposite direction from sound to noise over the duration of twelve minutes (for a detail of the live-performance score see Figure 8). There is a more coordinated part in the middle when both harps 'meet' and play bisbigliando material. To complete the electronic track, I added multiple layers to the 'inner' harp:. These layers comprise electronically generated feedback sounds and a vocal part. At the very end of the piece only the female voice remains, slowly croaking in a low, percussion-like register from inside the harp.



Figure 8: First page of the score for the 'outer' harp of 'GIB SIE WIEDER' part 2. (Copyright 2014, Pia Palme)

Goose feathers form an aural and visual element in 'GIB SIE WIEDER'. They are used as tools to excite noise from the strings of both on the viola d'amore and the harp. The image of the goose with its white plumage, from the song that gives the work its title, triggered the impulse of playing with feathers. Through practical experimentation, I discovered some interesting sonic results such as a soft vibrating flutter, produced by stopping a vibrating metal string with the tip of a feather. This produces a sound a little like that of wings against a cage. Harpist Rhodri Davies brought up the idea of rotating feathers with an electric milk whisk, which not only gives beautiful sonic results, but is also visually effective on stage. White feathers rotate like the wings of a humming bird (see Figure 9). Feathers provide abundant symbolic imagery, resonant of freedom and artistic expression. For hundreds of years they have been used as tools, by writers, composers and in instruments (the strings of a cembalo are plucked with small pegs made from quills). Artists in former times often posed with a white goose feather in the right hand.



Figure 9: Feathers as tools for sound production. (Copyright 2014, Pia Palme)

Text and vocality

Because of the political dimension of the work, I planned to use text and vocal elements in 'GIB SIE WIEDER'. I created a vocal part which was then recorded for the audio-score and the electronic track. I wrote the text during the early stages of the composing process. During recent years, composing text in parallel to music has

become as important a practice for me. In a very informal and open manner I comment on what I perceive, recording whatever appears in my mind during work, jotting words down in a non-judgmental way. The first version of the text is reduced and revised a number of times. Writing text is an act of mindfulness and a parallel to that of composing music, as I notate the verbal background noise of my own system during the creative process. I do so as an artist and author regardless of any possible later use for the text.

These texts contribute to how I am composed as a composer in that they form a commentary about my work and its aesthetic or political function. What is more, I actively invent myself as a female composer in this way. Frequently I insert my texts into a vocal part or an existing libretto. This allows me to infuse the meta-level of a composer's commentary into a piece.

Voice performer Claudia Cervenka and I worked closely together through guided improvisation sessions to achieve the right performance of the text for 'GIB SIE WIEDER'. After recording, editing and producing the track, a remote but clearly defined feminine presence sounds from inside an object and harp by means of transduction. The text reflects on the topic of resonance:

Can resonance exist by itself can sound exist by itself oder: sind beide nicht denkbar folglich nicht existent ohne mich denkende hörende mitfühlende

my sympathy creates sound

kann eine saite entscheiden widerstand zu leisten

is resonance always forced

mit zu schwingen oder nicht mit zu schwingen stets erzwungen

sound without sympathy cannot sound

oder kann klang

ist zu hören ohne mit schwingen möglich aus freiem willen

is sound

a function of space

is there freedom to resonate or not to resonate

it does not need

my sympathy your sympathy

out of free will

Conclusion

I consider 'GIB SIE WIEDER' to be a politically motivated project. However, it does not didactic. Nor does it advocate any existing political conviction. Helmut Lachenmann insists on the subversiveness is an essential element of art. He states that opening one's sensory system and heart is already an act of subversion and music composed from such openness naturally incorporates a critical element. In Lachenmann's view "any art that deserves the name has a political significance, but the composer clearly disapproves of outspokenly political music, which whips up emotions to manipulate feelings or thoughts." (Heathcote, 2010, p.340-341).

Although I agree with this view, as a feminist composer I do not feel that it goes far enough. A mere critique or subversion of today's social and economic system, even if well done and profound, does not stimulate the change I seek. In their history of opera, Abbate and Parker (2012, p.381) write that it is possible to create a setting which tells us that, at least in this fictional world articulated through music, every relationship of power is fragile.

I consider that the material content and context of 'GIB SIE WIEDER' is fundamental to its understanding. The project involves text and vocality as well as a stage setting to create a visual context for my music. Even if the dimension is smaller here than one would normally expect, there is nevertheless an affinity to music-theater in 'GIB SIE WIEDER'. This affinity is is more than incidental. There is a more obvious engagement with social issues in my project than purely instrumental or electronic music could suggest. As a composer, I have foregrounded vocal music, scenic and interdisciplinary projects in my work, and I have done so not only because of my attraction to the human voice as such, but because of my artistic interest in contextual, social and political aspects of music. Following Susan McClary's debate of texted music (McClary, 2002, p.55), I find vocality and the use of texts more suited to articulate my aesthetic intentions. I perceive the entire process of composing music, which is subsequently performed and realised, as an act of transformation. The performance setting or 'fictionality' of the composition is an important factor to be considered in my work as it

contributes to the construction of gender (McClary, 2002, p.53). In the sense of Deleuze's becoming, the compositional plan in its potentiality links the virtual, the power of thought, with the real world. There is a fluidity in this process that enables a transgression from the norm without being too fixated on a predetermined political idea (Macarthur, 2010, p.85). It is this fluidity that keeps the compositional process openminded and undetermined. I do not want to impose a solution or sketch a certain political utopia in my work. As a composer I imagine aural patterns of emergence and sonic potentialities of change.

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Endnotes:

¹ 'GIB SIE WIEDER: a warning commentary on resonance I' for viola d'amore (with pickup), electronics, a sounding object and contrabass recorder. Text and installation sculpture by Pia Palme; voice (recorded): Claudia Cervenka. First performance: Garth Knox and Pia Palme, March 14th 2014, University of Huddersfield, St. Paul's Hall. 'GIB SIE WIEDER: a warning commentary on resonance II' for harp and electronics (playback via transducers on soundboard of the harp), 'outside' performer: Rhodri Davies, 'inside' the harp/all recorded in Vienna: Gabriela Mossyrsch, harp; Claudia Cervenka, voice; Pia Palme, feedback sounds & noises. Text by Pia Palme. Composed for the opening concert of the Beyond Pythagoras Symposium. First performance: Rhodri Davies, March 21st 2014, Beyond Pythagoras Symposium, University of Huddersfield, Phipps Hall.

² <u>http://en.wikipedia.org/wiki/Viola_d'amore [Accessed 23 April 2014].</u>

³ For example, see my blog about a month-long artist residency in Tehran, Iran, in 2013, working as a composer, curator, musician and giving workshops on free improvisation: <u>http://piapalme.at/live/tagebuch/</u> [Accessed 23 April 2014]. Here I report on the difficult situation of female artists and female musicians in particular in a society which is restrictive towards women and music in general.

⁴ The Greek origin of the word πολιτικός (politikos) translates as "of, for, or relating to citizens". [online] Available at: <u>http://en.wikipedia.org/wiki/Politics</u> [Accessed 23 April 2014].

⁵ The fox most probably acted driven only by hunger, not to harm the farmer purposefully. The order is indeed issued in polite way, explaining to the fox what the consequences might be (the hunter would be called).

⁶ http://www.kaffematthews.net/works/vitula-physicata/ [Accessed 23 April 2014].

⁷ A detailed description of the setup is given at: <u>http://www.essl.at/works/stern.html</u>. [Accessed 23 April 2014].

⁸ The company is located close to Vienna: <u>http://www.ompere.at/webshop/d1bt.html</u> [Accessed 23 April 2014].

⁹ The soundboard of the harp is not horizontal, and is moved during a performance. The suction cup works well, if the soundboard of the harp is in good condition. If the soundboard is uneven and cracked (as may be the case with an older harp), this speaker model can be mounted on the instrument with gaffer tape quite sufficiently.

¹⁰ I first started to work with audio-scores in 2006, and have been experimenting with different versions of this tool in a number of compositional projects.

¹¹ Here, I would like to mention the choreographic work of the Forsythe Company. In the project 'SIDER', William Forsythe uses audio-scores via headphones to direct the movements of dancers, using 'hidden' music inaudible to the audience, to show complex patterns operated by remote control. Project details can be found at <u>http://www.theforsythecompany.com/sider.html?&L=1%20ForceRecrawl%25253A%200</u> [Accessed 23 April 2014].