

# **The Other Stage**

by

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in the

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## **Abstract**

An interactive electroacoustic music composition and solo mixed-media performance realized as an alternatively-staged one-night concert event. This project examines the tradition of staging live electronic music and the role of a solo computer music composer-performer. It is a four-movement interactive work with an appended generative music system performed solo within an alternative stage layout. It is derived from an interdisciplinary practice of combining electroacoustic music and electronic dance music performance practices. This thesis project also includes custom built performance software and an interactive audio visual performance apparatus. It is an exploration of cybernetics in electroacoustic mixed-media performances that lends itself to the development of a personal compositional style.

**Keywords:** Interactive music; generative music; electroacoustic music; electronic dance music; cybernetics

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## Table of Contents

Approval.....	ii
Partial Copyright Licence.....	iii
Abstract.....	iv
Acknowledgements.....	v
Table of Contents.....	vi
List of Figures.....	vii
Introductory Image.....	viii
<b>1. <i>The Other Stage: Artist Statement</i>.....</b>	<b>1</b>
<b>2. <i>The Other Stage: Project Documentation</i>.....</b>	<b>6</b>
Software Patches and Performance Video Files.....	6
Project Images.....	6
<b>Appendices.....</b>	<b>12</b>
Appendix A. Practice Based Investigations for the Staging of Live	
Electroacoustic Music.....	13
Hierarchy in electroacoustic musical architectures.....	15
Collective musical experiences.....	18
Embodied Musical Experiences.....	21
Possible Alternative Practice Frameworks.....	23
Bibliography.....	25
Appendix B. DVD: <i>The Other Stage</i> Software and Video Files.....	27
Description.....	27
Filenames.....	27

## List of Figures

Figure 1. The Other Stage event: photograph of audience and venue layout.....	viii
Figure 2. Pre-Performance View of Venue and Audience.....	6
Figure 3. Performance Shot of Stage-Left 1.....	7
Figure 4. Performance Shot of Stage-Left 2.....	7
Figure 5. Performance Shot of Stage-Right 1 .....	8
Figure 6. Performance Shot of Stage-Right 2 .....	8
Figure 7. Performance Shot of Stage-Right 3 .....	9
Figure 8. Performance Shot of Down-Stage .....	9
Figure 9. Performance Area .....	10
Figure 10. Shot of Tech Rehearsal .....	10
Figure 11. Shot of Tech Setup .....	11
Figure 12. Shot of Screens and Room .....	11

## Introductory Image



**Figure 1.** *The Other Stage event: photograph of audience and venue layout*



# 1. *The Other Stage: Artist Statement*

"The Other Stage" is my thesis project examination of interactive electroacoustic music composition and solo mixed-media performance realized as an alternatively-staged one-night concert event. My project examines the tradition of staging live music and the role of a solo computer music composer-performer. The concepts behind this project are realized within each performance of this four movement interactive musical work. In staging this event, I am looking to problematize certain compositional ideas and live performance choices within my own musical practice. As such, my primary thesis question could be summarized as follows:

"How might I, as an emerging multi-disciplinary composer-performer, develop my own alternative compositional style that can address and benefit existing knowledge regarding the staging of live electroacoustic works?"

The music in "The Other Stage" synthesizes various ideas taken from my research into a range of approaches from cultural history, critical theory, and music theory and practice, but is essentially my presentation of an informed music praxis within an interdisciplinary context. In conceptualizing an overall methodology for this thesis project I have employed a broad palette of strokes that draws on concepts of interactivity, improvisation, indeterminacy, electroacoustic and electronic dance music performance practices, and real-time generative music creation. To better explore these concepts I have built an apparatus for solo performance consisting of customized interactive software, expressive physical interfaces, projection, spatialized sound controllers, and generative music systems. With this I have composed a four-movement interactive work called "The Other Stage". The four movements are: *Stage-Left*, *Stage-Right*, *Up-Stage*, *Down-Stage*; the appended generative music system *Center-Stage* and overall staging situate these concepts in an interdisciplinary practice. I have also chosen to stage the entire work in such a way that the audience will be able to view the performance process in a more intimate and casual way. This is why the performance of this work would not be possible in a standard auditorium with standard tiered seating.

The first movement *Stage-Left* creates a compositional fusion between acousmatic and electronic dance music styles through performative computer interaction and explores the concept of melding these styles through improvised and computer-generated audio spatialization. By transitioning the timbres from speaker to speaker while using a wireless touch-screen interface, I am exploring sonic spatialization techniques and sound gesture ideas that are used in certain fixed-media electroacoustic works. The use of the interfaces in this movement, convey the physical performance gestures and interactivity to the audience.

The purpose of the projection throughout this movement and the others is not secondary to the process, but rather to reflect the notion of a performer-computer relationship in the form of a coloured score. The projected colour red indicates an opening improvisatory section where I manually trigger and pan the timbres with a wireless touch-screen interface. The colour green indicates that I must move back to the middle of the apparatus and improvise with a different interface, which is linked to a separated set of timbres. The colour blue indicates that the ending sequence has started and the last set of timbres may be used. In order to better observe the coloured score in this movement and the last, I must periodically leave the area that would normally be considered the stage and use the wireless touch-screen interface for control. In effect, this limitation converts the entire room into a stage and creates a different performer relationship to the audience.

The second movement *Stage-Right* explores the cybernetic relation of humans and machines in electroacoustic mixed-media performances. The use of the trombone is at play with a notion of questioned acoustic authenticity in performance. This is in regards to an audience possibly questioning the authenticity of the sound sources in a live setting with the computer equally used as an instrument. The role of the machine in this context is to indeterminately harmonize the trombone's sound through signal processing while providing the performer with a coloured score. The projected colours of green, yellow and red are used to indicate the chordal improvisatory key areas of B flat major, E flat major and F major. All three key areas are indeterminately chosen at specified times. One key after another, the computer projects these associated colours on all four screens until all are played. A key concept behind this movement and the overall work is to present a computer-driven ephemeral performance. This is placed into

practice as the improvisational sections, represented by projected colours, are indeterminately chosen by the computer system. In this movement, I must relinquish my control of signal processing and allow the computer to choose the harmonic key areas.

*Up-Stage* furthers my exploration of computer interaction and electroacoustic compositional methodologies. This movement comments on my purpose as a performer by placing my body as the point of interaction. Through physical movement I am able to control the sonic gestures that are dictated by my improvisation and the machine's colour conducting. The four screens in this movement correspond to the four speakers. On any of the screens, the projected colour of red may appear. The colour red indicates the space in which I must place my right hand. My physical gestures pan the sound to the specified speaker. The colour blue indicates the space I must place my left hand, which triggers the morphing of the parameters creating the synthesized sound. My arms, free of touching any devices, are able to push and mutate these timbres from speaker to speaker. This is achieved using a Microsoft Kinect camera and custom software. I choose this piece of technology as it allows me to further explore performative gestures similarly to the physical devices used in the other movements and the live music presented in this movement is the result of this physical interaction within the cybernetic apparatus.

The final movement *Down-Stage* results from the manner in which computer-generated indeterminate events can create synthesized sound and melodic progressions. The form is projected as a real-time coloured score, which instructs me on how and when to control the triggering of the melodic loops and (in various sections) improvise the sound spatialization.

As an introduction to this movement my improvised guitar playing accompanies a generative melodic music system, an activity that is in contrast to the foreground trombone performance in the second movement. In this movement the purpose of the guitar is to explore my role as an accompanist to the computer system. Later in the movement I am instructed by the computer to move away from the guitar to trigger the melodies and timbres on the wireless control surface. So once again, I move away from the central performance area and observe the projected score from any vantage point of my choice. As the computer is not programmed to play this entire movement by itself I

must still be involved in the composition process, thereby further exploring the concept of human-computer interaction.

*Center-Stage* emerges from a two-year research assistantship with Professor Arne Eigenfeldt. It is a fully generative music system that can be seen as a musical addition to the four movements. It is a standalone generative system in which there is no operator to alter its parameters as it creates music on its own. No two pieces created by *Center-Stage* will be exactly the same and each will exist only for a few minutes. Since each piece generated from this system is different this machine is chosen to represent concepts of indeterminate and ephemeral musical events beyond the live performance. The inclusion of this generative system also borrows concepts of dance-club listening experiences. Thus, I am attempting to partially recreate a "dance-club" aesthetic while fusing it with real-time computer music in this acoustic environment.

To further this alternative staging concept the non-standard concert arrangement and bar service borrows from alternative electronic music venues such as nightclubs. It also borrows from the concept of musical "happenings" within gallery settings that allow the audience to move about as they please. The performance area has been placed in the centre of the room with the emphasis on visual access and casual audience movement. This promotes the idea of a communal environment that yields a different kind of audience-performer relationship than is found in the standard concert stage presentation.

"The Other Stage" is a culmination of the creative research I have conducted in the School for the Contemporary Arts at Simon Fraser University and it reflects my continual pursuit of new and interesting ways to perform interactive electroacoustic pieces. This project is also a reflection of the interdisciplinary knowledge I have gained from the practical application of my research at this school. In creating this apparatus and concert I have chosen to focus my research through a performance practice lens that has modified and challenged my compositional methodology. The overall work in presenting this project has provided me with the deeper experience of placing my interdisciplinary research in practice while the knowledge I gained from this project will benefit me in researching and devising methodologies for future works. By staging this work I wish to contribute to the knowledge bases surrounding electroacoustic and

electronic dance music composition and performance practices. I intend to accomplish this contribution through further publication and presentation about this project.

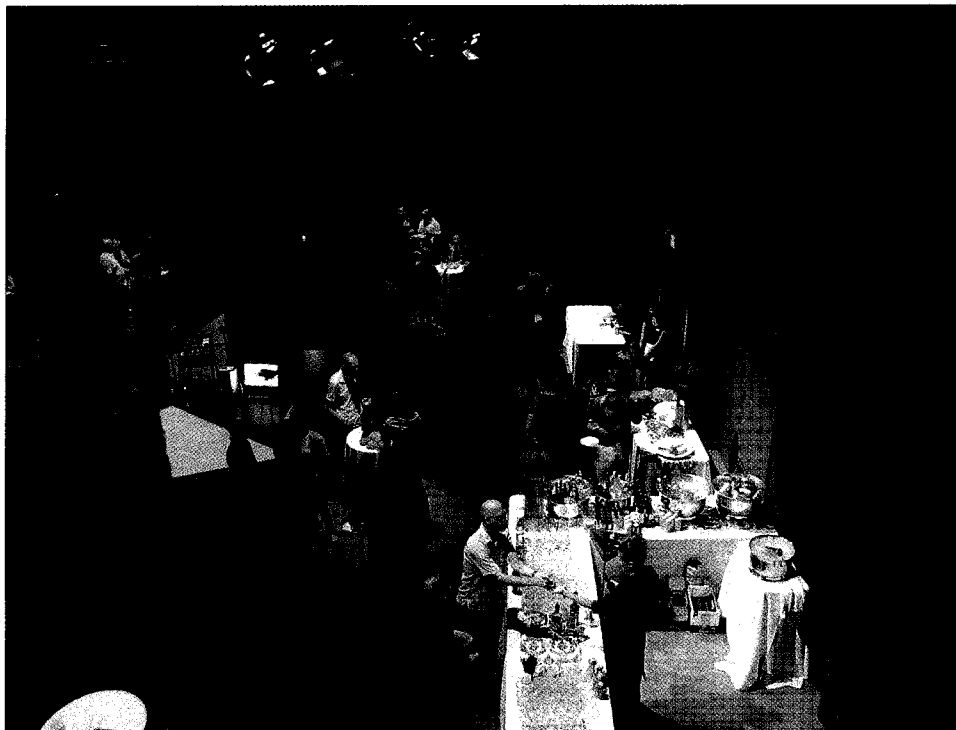
## **2. *The Other Stage: Project Documentation***

### **Software Patches and Performance Video Files**

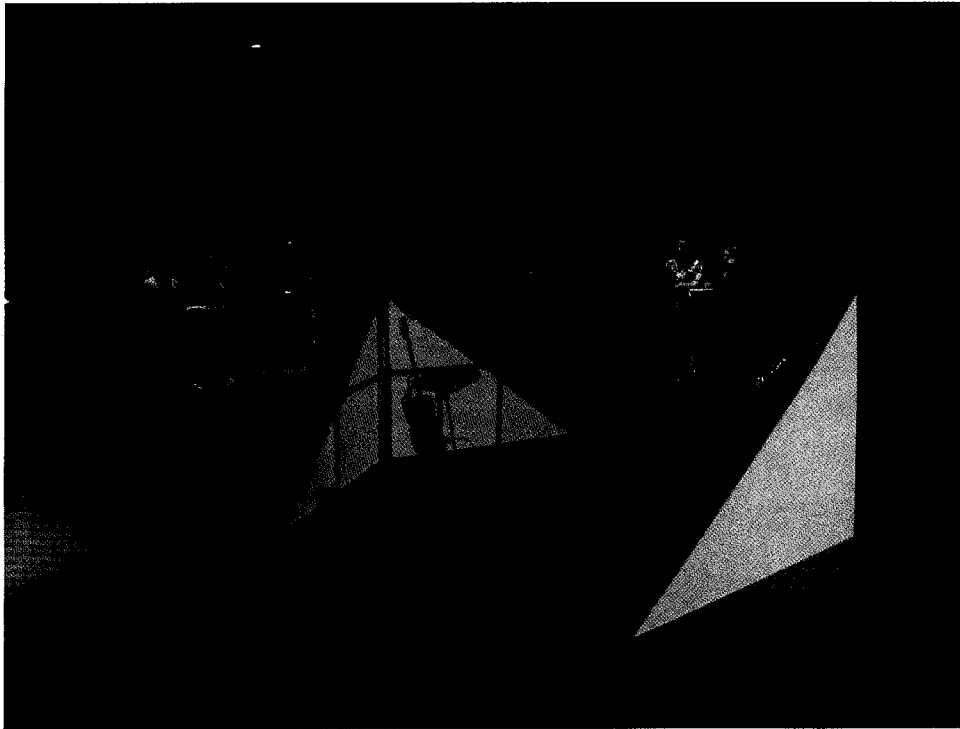
Please consult Appendix B. DVD: *The Other Stage* Software and Video Files.

### **Project Images**

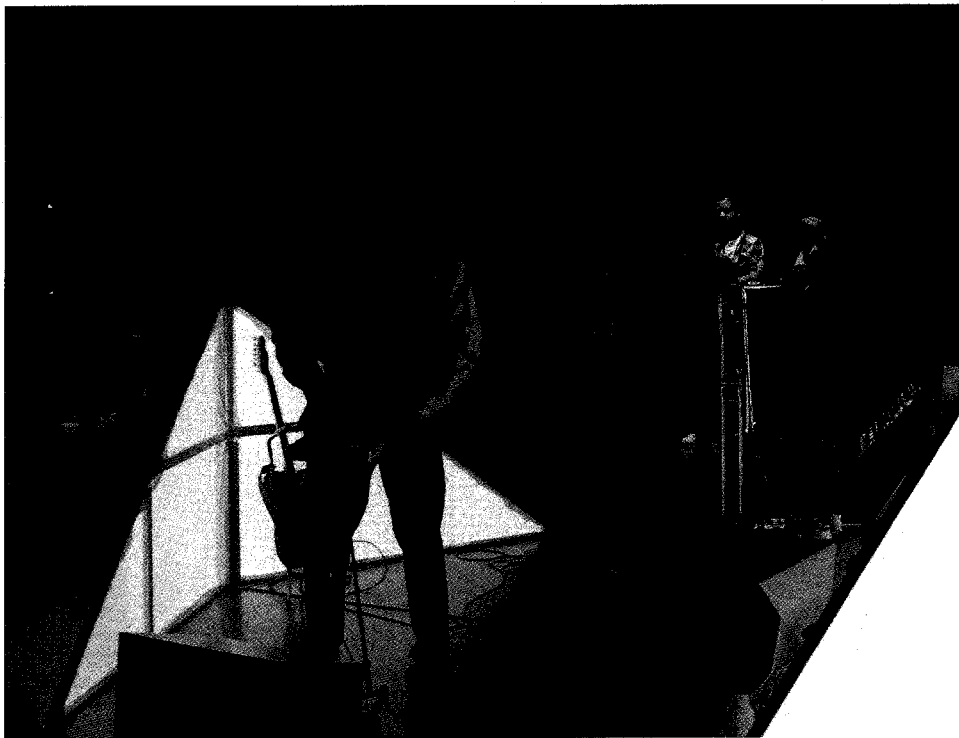
The following are images documenting my thesis performance show. The first eight images are still shots of the performance and venue on the night of September 15<sup>th</sup> 2012. The last three images are still shots of the technical setup and stage layout.



**Figure 2. *Pre-Performance View of Venue and Audience***



**Figure 3.** *Performance Shot of Stage-Left 1*



**Figure 4.** *Performance Shot of Stage-Left 2*

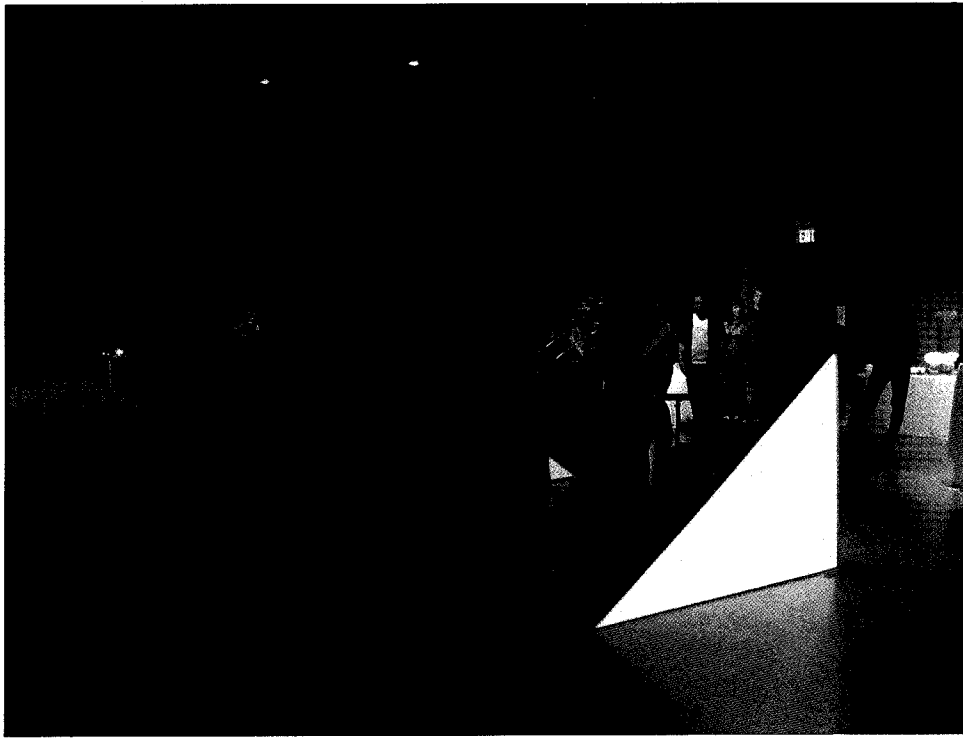


**Figure 5.** *Performance Shot of Stage-Right 1*

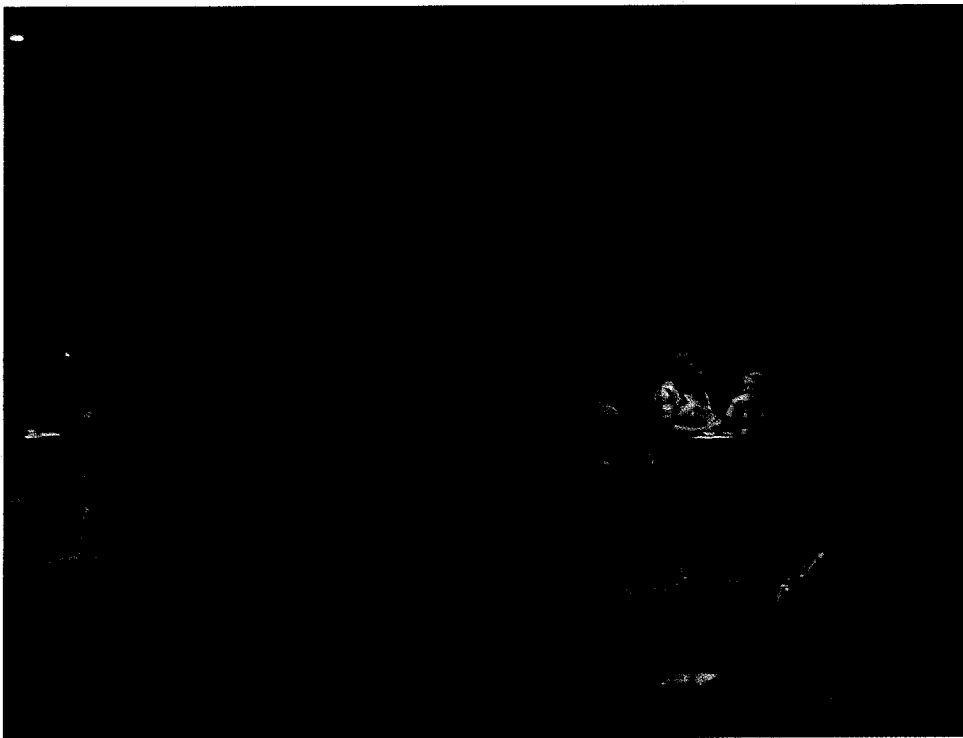


**Figure 6.** *Performance Shot of Stage-Right 2*





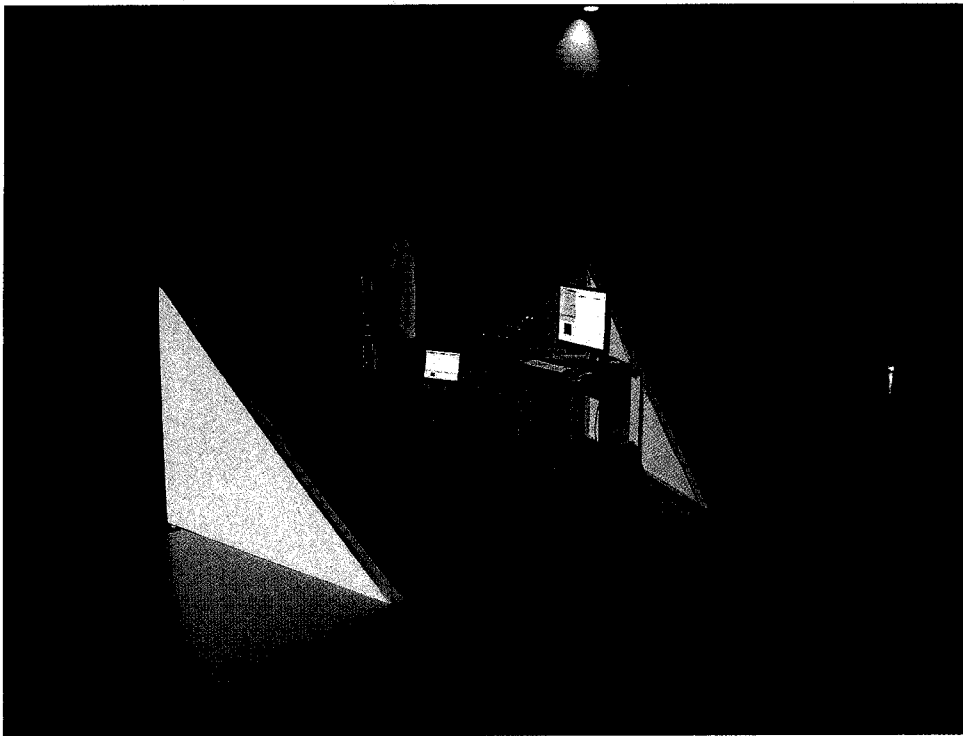
**Figure 7.** *Performance Shot of Stage-Right 3*



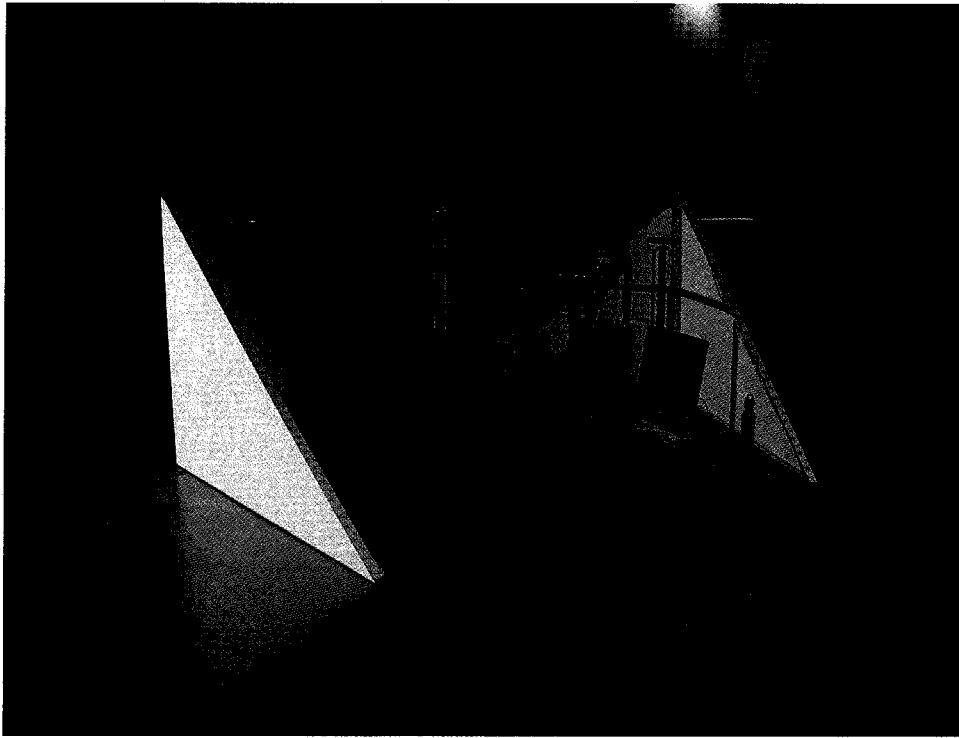
**Figure 8.** *Performance Shot of Down-Stage*



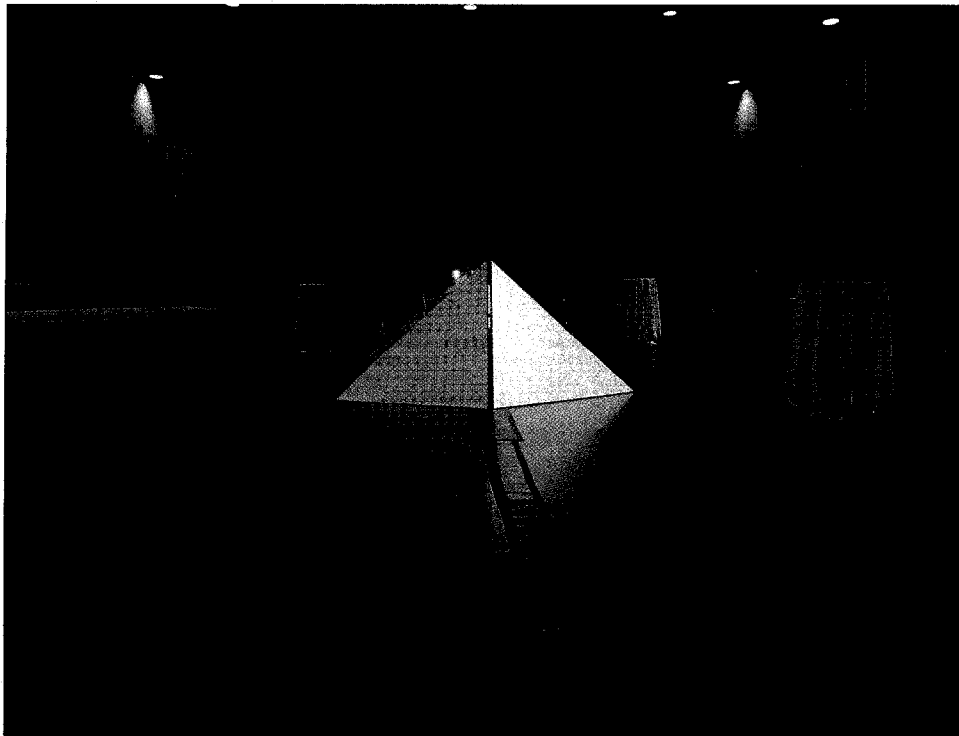
**Figure 9.** *Performance Area*



**Figure 10.** *Shot of Tech Rehearsal*



**Figure 11.** *Shot of Tech Setup*



**Figure 12.** *Shot of Screens and Room*

## **Appendices**

## **Appendix A.**

### **Practice Based Investigations for the Staging of Live Electroacoustic Music**

For many composers, understanding the architecture of a stage (i.e. its acoustics, performer setup and performer/ audience interaction) is vital to developing a personal compositional practice that considers the ultimate staging of a live work. When staging is considered, a composer can make well-informed decisions on how to exploit each nuance of the architecture for musical and artistic effect. Yet as this approach may work for composers using traditional stages, there are some compositions that may not benefit from performing them in a traditional concert setting. In particular, the advent of certain electroacoustic music compositional practices in the 20th century introduced a tradition of presenting many multi-speaker spatialized fixed media works in traditional performance spaces as well as having helped move the computer onto the stage (Keislar 17).

While there has been a trend in the last thirty or more years of using computers on a traditional stage, some electroacoustic composers may still find this use problematic in regard to their own performance practices. For example, in exploring the presentation of new compositions some new software-based compositions or systems may introduce a whole new set of audience related concerns related to the reception of music and traditional performance aesthetics. In response to this concern, many electroacoustic composers have chosen not to present their works within the framework of traditional concert architectures. This paper will focus on some of these performance practices in order to build on new practice methodologies.

For the purposes of this paper, I have decided to focus on this key question "How might I, as an emerging multi-disciplinary composer, develop my own alternative

compositional style<sup>1</sup> that will address and benefit the existing knowledge surrounding performance practices in the staging of a live electroacoustic piece?" This paper will explore existing literature that addresses the cultural history, methodology and critical theories associated with approaching new electroacoustic compositional practices and staging strategies. In particular this paper will focus on how, in developing such strategies, composers need to take into consideration the notions of existing music performance hierarchies, architectures and other collective embodied musical experiences.

To avoid confusion when describing various historical aspects of electroacoustic music, some authors have opted to separate electronic music genres based on their social contexts. For example, in *Listening Through the Noise*, Joanna Demers has placed electronic music into three separate larger groups of genres or "metagenres": Institutional Electroacoustic Music, Electronica and Sound Art (Demers 6). She argues that, "participants often claim allegiance to one of three metagenres as a means of claiming high-art credibility" (6). This paper however, will not concentrate on differentiating between these "metagenres" or be concerned with supporting distinctions between "high" and "low" electronic music art forms.

What will be focused on are some of the compositional practices found within various genres of electronic music that fall within an overall general category of "electroacoustic" music using the term as defined by the Oxford English Dictionary:

Music. Of, designating, or relating to music incorporating electronically produced or modified sounds. ("Electroacoustic" def. 2)

This distinction will allow me to formulate alternative concepts of electroacoustic compositional practices that acknowledge a broader canon of the music outside of the

<sup>1</sup> The architecture of the strategies and methods used within the creation and presentation of an electroacoustic work.

restrictive distinctions imposed by some within institutional and popular music communities.

### **Hierarchy in electroacoustic musical architectures**

To understand better the architecture of a live performance space, it is worth examining various hierarchical structures that have historically had an affect on music compositional practices around the world. Traditional western music hierarchies have affected both the composition and performance practice aspects of many Western works. Take, for example, the standard arrangement of the orchestra, in which there are power relationships established between the lead-chair instruments to their sections, the instrumental sections to each other, the conductor to the whole orchestra and the performers to the audience. Most orchestral parts tend to be divided based on their acoustic purposes such as projected amplitude and pitch. Although, some have argued that this formation may mirror a pyramid-ranking system, similar to other historical hierarchical ranking systems such as those found within a military or those established by the Church (Blessner & Salter 92). The ranking of each instrumental section in turn may have played a significant role in the creation of some compositions.

This notion, reflected in compositional practice, is used to facilitate properly the live diffusion of the specific instrumental timbres into acoustic space. Each instrumental voice must be projected in a particular way. Therefore, the acoustic instrumentation is layered and multiplied in such an arrangement as to achieve certain harmonic resonance and dynamic levels. These architectural considerations can be seen in traditional European concert halls or venues that contain standard tiered amphitheatre style seating arrangements aimed towards a raised proscenium stage.

In contrast, not all traditional music stages of the world have been designed to present an acoustic performance within such hierarchical constraints. Take for example the hierarchies that are presented within the performance of Javanese or Balinese gamelan music. A traditional gamelan orchestra is arranged in a specific order to reflect a combination of instrumental timbres inherent to the heterophonic and colotomic structures found within many gamelan compositional practices. The physical location of

each gong is crucial to the participatory performance practice of the performers and overall sound of the compositions (Spiller 84).

Throughout the 20<sup>th</sup> century, many Western art music composers have sourced alternative hierarchical orchestral structures, such as within gamelan music, for research in their own compositions. For example, Steve Reich uses a different model of instrumental arrangement for his "Music for 18 Musicians". His cyclical use of doubled idiophonic instruments, such as marimbas and xylophones, suggests the influence of gamelan compositional practices. However, one key difference between the many performances of Reich's "Music for 18 Musicians" and many traditional gamelan performances, is the level of proximity an audience has to the stage. For most traditional Western music stages, there is an observable distance between the raised stage and audience seating, whereas many other traditional music stages of the world exist on the same level as the audience. While this observable distance may work for the staging of Steve Reich's compositions, it may still be problematic for performing other music of the world. In some cases, the height of a stage may also evoke a hierarchical power relationship between the audience and performer. Within his book *Haunted Weather*, composer, musician and electronic music scholar, David Toop discusses the problematic history of staging certain international music concerts or spiritual rituals on western stages as "a long and tortuous history of European concert promoters presenting music from regions that do not share the values embodied in concert venues designed for classical orchestras" (Toop 21). He further acknowledges this problem with reference to musicologist Christopher Small as such:

...Exoticism and voyeurism are compounded by alienation. In all its manifestations, this problem is an adversary attacked repeatedly by every conceivable strategy during the 20<sup>th</sup> century: a few performers address ranks of passive observers in the atmosphere of the mausoleum. 'The modern concert hall is built on the assumption that a musical performance is a system of one-way communication,' wrote musicologist and educator Christopher Small in *Musicking*. 'from composer to listener through the medium of the performers. That being so, it is natural that the auditorium should be designed in such a way as to project to the listeners as strongly and as clearly as possible the sounds that the performers are making'(10). As for rhythmic patterns and repetitious vocals, they are supposed to facilitate trance states, not fashion critiques. Neither should this music be a purely performative spectacle, a 'thing' to observe. (Toop 22)



These concerns are also related to the staging of electroacoustic pieces. In *Listening Through the Noise*, Joanna Demers explains that Western aesthetics from the classical era had claimed legitimacy over the “plastic arts” (42) by imposing “cultural practices that frame music in a metaphorical sense, so that listeners could contemplate works in a way similar to how museum goers contemplate works of art” (42). Demers further describes the history of electroacoustic music as:

...wreaking havoc with pre-electronic music’s rituals through the use of unmusical sounds as well as its destruction on liveness; this is the same sort of havoc that twentieth-century art movements, from Cubism to minimalist sculpture, wreaked their destruction of the frame. Cage began the destruction of this barrier with the silent piece “4, 33”. In exposing the ideal of silence as unattainable, Cage redirected attention to all sounds, musical or otherwise.

...Most post-Schaefferian works, even those by Smalley and Wishart that sound very little like music, nonetheless adhere to the conventions of the live performance of music. When these works are experienced live, audiences sit quietly, just as they would at a concert of acoustic music.  
(42)

If Demers is suggesting that “most” post-Schaefferian<sup>2</sup> electroacoustic works “adhere to the conventions of the live performance of music”, there must also be some composers staging their works outside of the Western concert tradition. For example, many electroacoustic composers have been involved in projects that blur the lines of distinction between a live performance architecture and public sound-art installation. “The Morning Line”<sup>3</sup> created by artist Matthew Ritchie, in collaboration with architect, Ben Aranda is such a project. This pavilion, currently on display in Vienna, stands as a forty channel audio installation, site-specific performance space and a twenty meter long public pavilion. Various composers, such as Christian Fennez and Florian Hecker, have been commissioned to compose pieces specifically for installation and performances within this large architecture. The ecology of having spatialized speakers,

<sup>2</sup> Electroacoustic music composed after the introduction of compositional methodologies from composer Pierre Schaeffer in the mid 20th century (Demers 25).

<sup>3</sup> <http://www.tba21.org/pavilions/> (Thyssen-Bornemisza Art Contemporary)

audiences, composers and performers within this architecture is akin to other pieces written for artistic social architectures such as Iannis Xenakis' and Karlheinz Stockhausen's works commissioned for the pavilions of the 1970 World's fair in Osaka, Japan (Blessner & Salter 172).

Electroacoustic works performed at happenings within art gallery spaces are again another example of social architectures that have been considered outside of a traditional stage setting. However, outside of these specific instances there is another significant social architecture that has acted as the stage for electronic music in a much more egalitarian way: the dance floor.

A dance floor to many traditional audiences, is perhaps synonymous with other forms of social entertainment rather than a space for what they may call a "serious" cultural event (Eco 152). Umberto Eco in *Travels in Hyperreality* describes this problematic tendency to label "culture as show business" (152), since many "still speak of culture only with reference to "high" culture" (152). For many audiences who had become accustomed to various genres of electronic dance music since the latter parts of the 20<sup>th</sup> century, the architecture of the warehouse rave<sup>4</sup> or dance club had become an alternative place where certain kinds of electroacoustic performances could be experienced apart from any elitist cultural distinction. In a later description of how the dance floor may be considered a viable alternative to the hierarchical confines of traditional Western staging, it is worth discussing how these alternative spaces introduce the notion of collective musical experiences, participation and perspective.

### **Collective musical experiences**

With the evolution of Western amphitheatres over the course of a few centuries came certain formal codes of conduct and protocols that were established to control audiences. Umberto Eco provides an explanation of what some concert-goers would consider a "serious" cultural event based on their views of codes of conduct:

<sup>4</sup> An appropriated derelict industrial space converted into an all-night music venue.

Another characteristic of the "serious" cultural event is that the audience must not participate. It sits and listens, or watches; in this sense a spectacle (or what was once a spectacle in the "bad" sense) can become "serious" when the public takes no active part but simply attends passively. So it is possible that the audience of Greek comedy watched while spitting out fruit pits and taunting the actors; but today, in a dutifully archeologized amphitheatre, the same comedy is more culture than entertainment, and people keep quiet (and, is hoped, are bored). (Eco 152)

What Eco speaks to here, is a hindrance or lack of audience participation induced by these formalized settings. However, since the latter half of the 20th century, not all artistic performances have ignored the audience or imposed such formal rules of conduct in a formalized setting. One can see the acknowledgement of the audience and formal codes of conduct challenged in much post-Brechtian theatre (Kattwinkel xi). In terms of musical performance history, many traditional stages saw the return of audience interaction in the form of jazz and, later, rock and roll concerts. Examples of this interaction can be seen in audience shouts of encouragement during jazz solos or stadium singing en masse during the performance of a popular song.

This activity closely resembles the embodied musical experience of a musician in performance. There is a high level of active listening and concentration that most traditional musicians must use in order to perform properly. As active listening is a key aspect of a real-time performance practice, many musicians spend more time rehearsing in a solitary space than in front of an audience. In a rehearsal space, there is no division between audience and musician. Each member of the ensemble has the opportunity to be both an audience member and performer: the music played can be solely for the purpose of a collective musical experience. But how may collective musical experiences work in terms of an electroacoustic performance?

For the most part, many collective participations in electroacoustic music have recently been in the form of interactive installations<sup>5</sup>, collective performance devices<sup>6</sup> or in the form of laptop ensembles<sup>7</sup>.

The dance floor, however, can be seen as a space in which audience participation, collective experience and musical embodiment may also happen. What, then, defines the experience of participation in this space? As Susan Kattwinkel might suggest:

“Audience participation may not be something that can be theorized as a whole; it may require a set of theories that can be combined to examine individual experiences”. (Kattwinkel x)

Audience participation upon a dance floor is a key component to the inner working of a performance practice in a dance club or rave party. The socio-political history of electronic dance music is strongly tied to its staging, performance and interactivity. The performer within the framework of these social architectures is usually seen in the form of the DJ (Brewster & Broughton 8). An integral part of a DJ's performance practice is to weave together a non-stop durational mix of pre-recorded electronic music for the audience to embody. The audience in turn, plays a crucial participatory role by providing visual feedback through their bodily movements. If the audience fails to acknowledge the music, the DJ must compensate. This is also commonly known to DJs as “reading the room” or “reading the crowd” (Brewster & Broughton 323). Each song or “track” selected by the DJ usually conforms to a particular genre that the dance floor audience has come to expect, depending on the given nightclub or stage. For example, a nightclub or stage that would feature DJs playing electronic dance recordings of a genre such as house music, would not usually play a completely different genre such as Drum and Bass. The stage in reference is not

<sup>5</sup> The Sonic Bed as such: <http://www.musicforbodies.net/wiki/SonicBedLondon>

<sup>6</sup> The NIME conference is devoted to these new devices: <http://www.nime.org/>

<sup>7</sup> The Princeton Laptop Orchestra PLOrk <http://plork.cs.princeton.edu/>

one on which a traditional performance would take place, nor is it expected that the DJ would be overtly performative in their mix. Most DJs who perform in nightclubs are usually removed from the audience, or it is assumed that the dance floor is the place that most performative events happen through participation. Many historical DJ stages were created to provide a collective gathering and project sound over large crowds, rather than for aesthetic spectacle (Leloup 78).

As electronic dance music stages have changed over the last two decades, there now exists a trend in presenting DJs on traditional Western stages, with little regard for how the music is to be accessed by an audience within the architecture. For example, audiences of stadium based electronic dance concerts are farther removed from the stage, with the assumption that they are there to witness a live performative event, except the pre-produced music and remixes were composed or produced to be experienced aurally rather than visually. The music played by most stadium DJs is not entirely performed with live instrumentation. In order to appeal to the audience facing the stage, most stadium DJs will incorporate an elaborate display of visual content for spectacle. However, this experience may differ for each member of the audience and as Kattwinkle had suggested it may be more poignant to focus on how audience participation is best looked at in relation to individual experiences (x).

### **Embodied Musical Experiences**

Phenomenologist Maurice Merleau-Ponty once posited that human consciousness is an “embodied” consciousness: “To be a body, is to be tied to a certain world. ... Our body is not primarily in space: it is of it” (148). David Stewart has also suggested that, “To be bodily is to exist in a world inhabited by other persons ... one discovers his own authentic humanity only by recognizing the humanity of others” (Stewart and Mikunas 63). What then might it mean to be a body within an audience? Matthew Reason has stated that matching the “intersubjective” experience of an audience is similar to the relationship between the individual members of the audience as a whole to that of the performer (217). Reason has also quoted Jean-Paul Sartre in relation to his explanation of audience embodiment:

An audience is primarily an assembly. That is to say, each member of an audience asks himself what he thinks of a play and at the same time what his neighbor is thinking. (67)

As mentioned earlier, there are certain traditional architectures and hierarchies that may misrepresent some important sections of compositions that are purposely set to be experienced through embodiment. If Merleau-Ponty, Stewart, Reason and Sartre suggest that a body within an audience may experience a communal understanding of a work, it may be worth further examining how a social musical architecture, such as a nightclub or rave, may reflect these collective embodied musical experiences. At the heart of what was popularly known as the rave scene in the 1990s, were groups of youth culture that shared common interests in all-night collective electronic dance music experiences either with or without the influence of certain drugs. However, key to the success of raves was the appropriation of abandoned industrial spaces to create site-specific atmospheres that broke the barriers of traditional societal and musical hierarchies.

Although the socio-political histories of nightclubs and raves are quite varied, these environments share a common bond when analyzed for their musical purposes. Both settings represent electroacoustic music within a broader social context. Much of the music is composed to be collectively experienced through movement rather than concert seating. As the DJ acts more as a shaman rather than performer, much electronic dance music seems to yield itself to a ritualistic series of events. Thus, the DJ creates a meta-work and leads the crowd through a series of never-ending embodied sonic events as a ferryperson (Leloup 36).

Within the composition of much electronic dance music lies another vitally important consideration, the notion of rhythm. Henri Levebre speaks to rhythms as an "interaction between a place, a time and an expenditure of energy" (15). In *Rhythmanalysis* he explains one category of rhythm as Dominating-dominant rhythms "completely made up: everyday or long-lasting, in music or in speech, aiming for an effect beyond themselves" (18). The dance rhythms inherent to rave culture may share this social understanding of rhythm.

For many other styles of electroacoustic music, rhythm has not always been considered an important feature. Repetition has been largely avoided, as has the use of a sequential grid. Rhythm and repetition however, are extensively used within electronic dance music production. The concept of groove (the subtle variance of rhythmic timing between notes) is also applied. The syncopation of rhythms, the activation of perceived off-beats and the organization of notes on a grid lend themselves to danceability and durational listening over three or more hour mixes. Low repetitive bass frequencies are used to create movement on the dance floor, and the sounds of the mix are used to create a “human-machine sound movement assemblage” (Ferreira 19).

The very few studies that have analyzed electronic dance music on an academic level have shown that many electronic dance music compositions contain rich timbral complexities that are worthy of further investigation beyond their relationship to a commercial music sphere (Eigenfeldt 2). So how then might the study of electronic dance music provide new approaches to the staging of a live electroacoustic piece?

### **Possible Alternative Practice Frameworks**

The study of electronic dance music performance practices may help other electroacoustic composers reconsider what role the stage plays within their own performance methodology. It may challenge the understanding of hierarchical power relationships with audiences and provide alternatives to the formalities of traditional concerts. It may provide options for audience participation and also provide options to explore electroacoustic compositions within a broader social context.

Electroacoustic meta-creation systems placed within a dance environment may also create new options for collective interactivity, and may provide larger social contexts in researching critical theory surrounding computational creativity. In developing new multi-disciplinary practices that address stage hierarchy and promote audience participation, some electroacoustic performance practices and research may benefit from creating new collective experiences. Further areas of research may include deeper theoretical investigations into live human-computer interactions, the evolution of DJ meta-practices beyond the dance floor, generative explorations of electronic dance music within electroacoustic composition, the development of new live electroacoustic

performance terminologies and the exploration of new performance methods in electroacoustic practices borrowed from DJing.

The research discussed in this paper can be used in the development of a personal alternative electroacoustic compositional practice. Such a practice may be seen as a custom built architectural lattice that supports both personal research and practice. The performance and staging of a new composition is then a manifestation of this research. As methodologies widely differ between composers, it then becomes clear that each emerging contemporary composer must develop their own personal compositional practice and with that, their own artistic research practice, whether the research examines a canon of academic compositional practices or ventures outside of the academy. It is of importance how this personal research architecture may benefit the creation and performance of new works of music that challenge other electroacoustic research practitioners into furthering the collective production and presentation of knowledge.



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## **Appendix B.**

### **DVD: *The Other Stage* Software and Video Files**

#### **Description**

This DVD contains the software patch that was made for this project. It also contains the video documentation of my thesis performance. Over the summer of 2012, this software patch was developed in MaxForLive format for this performance. This patch has been added as a document of my programming process. For Mac OS 10.7 computers or above, I have included a MaxMSP formatted patch and a standalone application version of the patch for exploring. Although this patch and software will not work as it did for the performance, it has been included for viewing and research purposes.

#### **Filenames**

- Software Patch 01: OStage1.3Max.maxpat, Christopher Anderson, MaxMSP patch, 2012.
- Software Application 01: OStage1.3MaxSA, Christopher Anderson, Mac OSX Application, 2012.
- Video 01: The Other Stage, Christopher Anderson, Single-channel video, 40:51 min., 2012.