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NARRATIVE IN LIVE VISUAL PERFORMANCE

by

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ABSTRACT

For purposes of this thesis, live visual performance is defined as the accompaniment of music using projected or televised visual stimuli to achieve a supplemental interpretation of the music to tell its 'story' in a visual way. In my research I have found that, while complex narrative in a song can be conveyed through various means, the attention span of those listening and watching in a club setting is not conducive for patrons to sit down and engage in watching the visuals for a protracted period of time. Most patrons are dancing and socializing and do not choose to watch the video to derive complex meaning or context. My research has shown that, while introducing complex visual storylines may be the ultimate goal for a live visual performance in a studio or orchestral setting, the best way to convey an artist's message in a club environment is through the use of repetitive symbols and visuals that move according to the beats of the music, light up the darkened atmosphere, and/or create a social metronome. This thesis presents the process by which the visual symbols were created and then chosen for specific, targeted performances and discusses the results of patron surveys that assess their initial responses to the accompanying live visual performance.

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LIST OF ACRONYMS/ABBREVIATIONS

DJ – Disk Jockey

VJ – Visual Jockey or Live Visual Performer or Visualist

Eye Candy - simple designs, which have very little meaning by themselves

CHAPTER ONE: INTRODUCTION

The purpose of this study is to further the practice of live visual performance. As witnessed by this author, the current practice of live visual performance to date has been very sophisticated technically, but does little with narrative. While the use of archived film, video clips, and/or other types of media may be somewhat similar to a live visual performance in form and delivery, live visual performance provides the opportunity to display ad hoc narrative qualities in very apparent and unique ways.

In the first phase of the current study this author, who also acted as the performing artist, first reviewed the literature in search of empirical evidence to discover the overarching properties and functions of the narrative element found in new media in an attempt to find a common thread related to narrative constructs. This author/artist then used this data to form a theoretical basis for how to effectively portray these narrative constructs in a live visual performance in such a way that did not alter the style and aesthetics that generally characterize this art form. In the second phase these newly synthesized theories were utilized to influence and inform the creation of an entirely new and unique form live performance.

Definition of Live Visual Performance

Live visual performance is a presentation routine in which an artist creates a digitally mediated video composition to accompany a musical performance. This genre of video is produced and performed live simultaneously with the musician(s) or electronic music composer(s) and projected or displayed for venue patrons to enjoy. For purposes of this study, this artist attempted to use narrative & semiotics to represent his own visual interpretations of the

musical 'story' being played with the goal of enhancing the musical performance for the enjoyment and engagement of the venue patrons.

Live visual performance, sometimes called *VJ-ing,* is usually carried out along side a musical performance. Throughout the entire research period this artist worked with a group of music composers or mixers to enhance the message they were attempting to create in their music and to build a personal vocabulary with in live visual performance. This collaboration between visual artist, party promoter, and musical performer allowed the work to been seen by everyday club goers, artists, and other fellow live visual performers. This author believes that between the musician and the audience there is a level of uncertainty that the correct message might not be evoked, or that the message will be lost in translation. It is with this concept that I proposed to aid the musician through the use of mediated visual stimulus.

This study and its accompanying artistic endeavor aim to further the understanding of an creative rendering that has seen relatively little research, although it has been around for quite some time. This study enduring effect on its audience, and uncover whether a story construct provides an audience with a more pleasant experience.

For this study, the primary genre of music being considered is Electronic Dance Music (EDM). As a practicing artist, I am very familiar with the production of the music, the style(s) in which it is performed, and the intricacies and social aspects of the event. I know from personal experience that Orlando and Miami are both considered the breeding ground for many of the most well-known international electronic music performers. I have been mixing records for quite some time, and have a background that allowed me to directly relate to other disk jockeys (DJs). The main job of a DJ is to mix and affect previously created music. Although many

classically trained musicians would not consider the DJ a musician, this person deals with many of the same concepts that do the guitar player or drummer, for example, the so-called *turntablist* DJ who "scratches" samples. Scratching is the action of playing a sample by manipulating a vinyl record (or more recently a CD turntable, or time coded vinyl record with a computer interface) with ones hand. This scratching allows the *turntablist* to manipulate the sound's pitch and duration in the same way a guitar player strums a guitar or a piano player hits a key.

Project Description

For this study I created a method of performance that represents the fusion of two activities: Video Editing and Audio Mixing in a live performance setting. In this project live and archived video are edited in front of an audience simultaneously with the live musical performance. This performance is a hybrid of many types of media, from sound and light, still image and video, and generative arts.

Production

As the name implies, in a live visual performance the video routine is performed live, in contrast to the current model of displaying archived films that filmmakers spend months preparing ahead of time. In the typical film production environments, video edits are rendered into film or other type of media so it can be displayed in a shared environment. For this project, the creative work was edited and composed on the fly, live, in front of the audience. The same rendered media could have been created ahead of time and archived, but, as it is a live

performance, subsequent showings would not be identical nor could the actual breadth of the performance be captured, making later performances much different in many respects.

Setting

The ideal setting for this type of performance is usually a staged nightclub or performance hall. Because the routine is both auditory and visual the venue must be set up to handle the video media being displayed or projected and have an audio system capable of playing the music. For purposes of this study, a nightclub environment was chosen, due to the recent popularity of this art form in this setting. As stated in my findings and from undocumented interviews with performers while in the planning stage of this study, live visual performance in the club setting adds a necessary visual sensory stimulation.

Project Timeline

A three-step method of inquirywas used to delve into the realm of live visual performance. First was to learn more about the practice of live visual performance by interviewing and surveying current performers in the field. Then a literature review was conducted to search for major bodies of work in the field, such as history, methods, and other artistic and engineering endeavors. Then adjacent topics were researched, such as *narratology*. (the theory and study of narrative and narrative structure and the ways they affect our perception (Branigan, 1992)). All of these findings were applied to a series of live visual performances. These performances took place over the period of a year in the Orlando and Miami area, and viewers were interviewed and surveyed to discover reactions. Lastly, more materials were

created and gathered for performance for use in later performances, and to collaborate between

other visual and musical artists.

CHAPTER TWO: LITERATURE REVIEW

This chapter is dedicated to explaining the various theories concepts, and contexts of narratology and live visual performance as found in books, journals, and magazine articles.

History

Although live visual performance uses many computerized tools, artists and scientists have been researching and developing the machines, appliances, and techniques that synergistically approach visual and music composition since the 1700s. The following is a synthesis of the more important chronology of events in the history of live visual performance based on the work of several historians (Gerstner, 2001; Peacock, 1988; Spiegel, 1998; Youngblood, 1970):

- In 1893 (GB patent 189324814 was filed that year and granted in 1895), British painter Alexander Wallace Rimington invented the Clavier à lumières, also called Rimington's Colour Organ .

- In 1893, Bainbridge Bishop created a scheme that corresponded musical notes to colors. It reads as follows: B violet-red Bb violet A violet-blue G# blue G green-blue F# green F yellow-green E green-gold / yellow D# yellow-orange D orange C# orange-red C red. It should be noted that the as the musical notes move through the octave, the colors move through the rainbow as created by nature.

- In 1914, Kandinsky created the abstract musical drama *The Yellow Sound* in which the main actor is the color yellow.

- Between 1919 and 1924 Viking Eggeling produced Diagonal-Symphonie, the first purely abstract film, in Berlin. It was a continuous sequence of abstract images that evolved and transformed.

- In 1922 Thomas Wilfred began giving Clavilux (a form of the color organ) concerts in the United States, Canada, and Europe.

- From the late 1920s to the early 1930s, The Farbenlichtspiel color organ, developed at the Weimar Bauhaus School by Hirshfeld-Mack and Kurt Schwerdtfeger, was displayed at several Color Music Congresses. Several of these festivals and events occurred during this time in Germany.

- In 1947, Thomas Wilfred says "Twenty years hence, perhaps much sooner, people will find it hard to believe that, in our atomic generation, many still shook their heads at the thought of an eighth art coming into the world to take its place among the accepted seven; a major fine art at that, in which the artist's sole medium of expression is light".

- In 1958 Edgar Varese composed *Poeme Electronique* to be part of a sound and light environment created in collaboration with the architect LeCorbusier, for demonstration at the Philips Pavilion at the Brussels World's Fair. Light images were projected on the walls of the pavilion while music moved in sweeping arcs through the pavilion. No attempt was made to synchronize the light and sounds.

- 1969 - Nam June Paik's composition The Medium Is the Medium was broadcast by WGBH in Boston.

- 1974-79 Max Mathews along with Laurie Spiegel at Bell Labs created VAMPIRE (Video and Music Program for Interactive Real-time Exploration/Experimentation). This computer allowed for simultaneous creation of music and visuals, creating an instrument for an audio-visual performer.

- Bernard Szajner in 1980 created the laser harp, which is an array of lasers that resembles the strings of a piano. Philippe Guerre later created a MIDI version of the laser harp. They have been used in many different public installations & music festivals.

Equipment and Engineering

Perhaps one of the most prohibitive tasks in the creation of a live visual performance set-up is the cost. Video equipment usually uses some sort of computer processor, which generally can cost significant amount of money.   As shown in the following paragraphs, an interaction with the audience similar to that of a musical performer is important to the live visual performance in order to get the live visual performer away from the stigma of a video technician.

Michael Lew (2004) attempted to develop an interface for live video performance attempts allow more audience interaction. He states that most difficult part with this type of performance is that "most non-specialist audience members assumed video was prerecorded and did not understand the performers role on stage." (p.146). This is an important point to a live visual performer who would like to be taken seriously. Unless the audience has some sort of connection to the act that is taking place, they will not see the performance, thus they will not be able to enjoy the performance as an audience member.

The section on the DJ metaphor describes how a live visual performer is much like a Disk Jockey –media is mixed in much the same fashion as stated in Lew's list of tasks of a DJ:

1. Choose record (media retrieval)

2. Preview the record on the headphones and find the right track or sample within it; adjust speed, filters, effects (preview and adjustment)

3. Incorporate the material into the existing stream being played and manipulate the material by scratching, cutting, back spinning (live manipulation)

Lew conducted extensive applied engineering research dealing with how to connect the audience with the live visual performance and formed the theoretical and practical basis for the creation of the hardware component his project. I found through my own personal observation that the use of an instrument that can be viewed by the audience often become part of the overall perceived value associated with the performance, and, thus, becomes a part of the narrative construct of the performance. In fact, many examples of Lew's influence were realized during the interview process of this project.

A group of Canadian performers discuss their experiments with a control surface used in visual performance in their 2007 paper *A Mixing Board Interface for Graphics and Visualization Applications* (Crider, Bergner, Smyth, Moller, Troy, Kirpatrick, & Weiskopf, 2007). The hardware used for their performance was perceived as important to the finished product as a good quality brush is to a painter. This appears to validate Lew's statements and adds to the current project some basis for collecting empirical evidence. The device that they created used a projector to generate a touch screen like appearance that changed to different applications or need. Although I did not use this specific type of technology for my interface, their comments

guided and informed my own hardware creations that were utilized in my performances. They suggested that the specific type of mixing board or instrument that is utilized depends largely on the type of application. One would not use a golf club to play tennis, for example. They also found that being able to grasp controls is a more efficient way to interface with the computer that is used in a performance than touch screens.

An article from the Netherlands discusses a project an academic venture into building a mobile mixing station for live broadcast use (Engström, Esbjörnsson, Juhlin, 2008). The authors investigate the live visual performance production model and aesthetics because live visual performers are mixing video with a very compact tool set. This author believes that this tool set can directly relate to live broadcast for more commercial applications.

<u>Narrative and Video as an Art Form</u>

As described above, narratology is the theory and study of narrative and narrative structure and the ways they affect our perception. It could be said that a narrative or story is the description of a sequence of events and that human perception is based on replaying these events. Edward Branigan in his book, *Narrative Comprehension and Film* (1992), states that the overall pattern of a narrative can be broken down into a kind of equation: A, B, -A, -B, A. Where as "A" is the normal world, or setup. "B" is a tilt that causes the normal world to change. -A is a Climax causing the narrative to turn back toward A by subtracting B. A is the return to normalcy. Scholars have also created many other representations of the narrative schema over many years of study. It could also be said that the way human beings remember things is through a narrative structure (Bradt, 1997, Bamberg, 2006). The way we emotionally react to things is a combination

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of these stories used as previous reference. So our emotions are driven by story that we remember.

Musicians use lyrics, melody, rhythm, etc, in an attempt to make a connection with their audience. Most of the time they are not using narrative directly but the information that the audience is hearing is referencing certain narrative memories that the audience might have in order to evoke that emotion. In the same manner that a story has a rising action after the tilt, that gradually grows more and more tense leading to a climax, a piece of music has a crescendo or a passage of gradually increasing volume.

This author has learned through personally collected data that a certain level of uncertainty exists between the musician and the audience that the correct message might not be evoked, or the message will be lost in translation. It is with this concept that this author, who also served as the artist in this study, proposes to aid the message collection and comprehension process by accompanying the musician's live performance using visual stimuli that are created simultaneously with that performance.

Based on personal observation, this author further suggests that the opportunity to see a live visual performance is not the only motivation for the average patron to attend an event. It is an additive sensory stimulation that works with the music and on the people who are dancing to that music. It is, in a sense, like an interpretive dance that uses a computer rather than one's body. Much of the audience's attention is directed in many different places, so a VJ cannot assume that everyone is watching the video at all times. As found in this study, the proper way to convey a message is through multiple repetitions of the video, a quick display of symbols, all of which can be interpreted by the audience.

In the visual performances for this study, approximately one thousand (1000) video clips were used and grouped into thirty-five (35) clusters. Each group was labeled with a descriptive name, such as 'Metro', which is a collection of cityscapes. A musician must know the music being played, and the DJ music must know the music he or she is mixing. Similarly, the VJ must know his or her clips, which creates a certain, specific vocabulary to work with.

Knowing the songs that are being played provides the visual artist an advantage in that he or she can react to the mood being created. Most of the tempo is set by the application and in effect the clips are triggered in a quantized manner, so it is up to the artist to display the correct clips. Howard Gardner's theory of multiple intelligences (Gardner, 1983), states that some people are more inclined to a specific type of activity or task. Live visual performance requires two of these intelligences, Musical and Spatial, as well as the ability to connect the two together.

The visual performer must connect to the music and control the video in a process called "flow" (Csikszentmihalyi, 1998). Flow is a physiological term where the body and mind click, in an almost trancelike focused state. This applies to gaming, music, and sports, and can also be defined as being, "in the zone."

The final part of the visual performers' interpretation is an 'on-the-fly', synesthetic reaction to the mood of the music. Synesthesia is a condition in which one type of sensory stimulation leads to an involuntary experience in another (Cytowic, 2002). For example: hearing sounds that immediately remind you of colors, e.g. sounding warm. This synesthesia is not the typical sound to color reaction that is seen in Bainbridge Bishop's work, but a sound to visual reaction. In this type of linear editing the interpretation must happen so fast to keep up with the music that acquiring this skill is key to a successful performance.

Just as a musician must know the music being played, a live visual performer must have a detailed knowledge of the music that is being performed, as well as the video that he or she will present. At one point, this artist actually split the cue channel from the DJ's mixer so that he was more aware of the track coming in. A cue channel is the channel that the DJ listens to, that is not played to the audience. This artist found that this became distracting to his own flow and made me as the interpreter much less in tune with the rest of the audience. Keeping up on the trends in the music that is being played, asking the musical artist which song will be played, and working with the musical artist to compile longer form clips to specific songs, are all suggested ways to continuously interpret, compose, and create unique visuals for one's audience during subsequent performances.

Mick Hartney (2008) describes video art as the following:

> A term used to describe art that uses both the apparatus and processes of television and video. It can take many forms: recordings that are broadcast, viewed in galleries or other venues, or distributed as tapes or discs; sculptural installations, which may incorporate one or more television receivers or monitors, displaying 'live' or recorded images and sound; and performances in which video representations are included.

As a visual artist this author has found that this definition means that the practice or creation of video art is rather loosely defined. I believe that this can be a fairly significant problem with many visual performances, and as a result, live visual performers have not tended

to put much effort into inserting narrative constructs behind the performances they create. In order to determine whether creating narrative based visual performances, I, as a researcher and performer, decided to create a multi-method approach to the conceptual design of this study, which has allowed me review the concept from both a theoretical and practical perspective.

Timmothy Jaeger's book, *Live Cinema Unraveled: Handbook for Live Visual Performance* (2005), acted as a primary guide and inspiration to me in this process. Jaeger's ideas are based on Rudolf Arnhem's (1957) ideas regarding the use of rapid montage in film. A montage is a rapid succession of film clips, presented along with music or special effects, which presents a compressed narrative. This idea is also very much related to visual performance. Jaeger's ideas became a major part of the theoretical approach I used to validate the use of live visual performance as an art form. Jaeger discusses the syntax of the live visual performance, suggesting that it is "a radical departure from previous cinema(s). It is a 'total art form' that encompasses music/sound, visuals, and installation."(p.24). He goes on to say, "It draws from a lineage founded by the Russian Constructivists in not being a 'pure' art form, but one that has a clear social function" (p.8). This author suggests that these passages provided clear rationale on how to use the tools to communicate a message and provide the basis for the story that I told in my performances.

CHAPTER THREE: METHODOLOGY

The theoretical foundations to this project were outlined in Chapter Two. This Chapter is dedicated to a discussion of the methodology and sequence that occurred in my personal discovery of the equipment, and the investigative survey that was administered to accomplish the goals of this project.

The major research that was attempted in this thesis involved three distinct phases: 1-the theoretical foundations behind narrative constructs and the effect that differing media would have on its interpretation 2-the building of the performance equipment (because it did not exist), and 3-the personal learning curve of this author/artist/researcher in the actual creative technique and timing of the live visual performances themselves as an automaticity/naturalization of the process was internalized.

Equipment, Software and Development

The system used in this project was a laptop and midi controller that went through a few iterations. The system began as a large, multiple component system, but migrated to a small system that was more practical, and portable. The current iteration relies heavily on software based processing for video mixing, with hardware-based power of a top-of-the-line portable computer.

VDMX is a modular video-mixing environment that is meant for mixing visuals and applying complex effects. It follows the same human computer interface trends used in popular audio manipulation and creation software. Much of the functionality of VDMX is based in a

series of modules, plug-ins, and effects that string together to allow for manipulation of video at a depth only previously reached by expensive video mixing equipment. The true power of VDMX comes from the ability to create your own interface, and thus your own instrument for creating visuals. Many of the other visual performers confront the interface in different ways, but all use some sort of combination of multiple clips overlaid on top of each other.

With this software this artist was able to compose video into that follows the patterns of the music that the performance is accompanying. The specific duration and speed of a video clip can be controlled so it matches the VDMX "clock" plugin. This clock is set in a measure format that can be set to a beats per minute, which can be directly related to the music being played. This means that the visual artist can trigger video clips that automatically snap to the time signature in a piece of audio being played.

VDMX is also able to host Quartz Compositions. Quartz Composer is a node-based visual programming language that uses OpenGL (including GLSL), Core Image, Core Video, Java Script, and other technologies to build an API and a developer tool around a simple visual programming paradigm. Quartz programming through Quartz Composer works by implementing and connecting patches. Similar to routines in traditional programming languages, patches are base processing units. The processing units execute and produce a result. The patches have input ports and output ports that allow data to be transferred from one patch to another.

As the project evolved, the equipment set-up changed considerably. The software and integrated specific hardware was developed to help control video in the same way that a DJ spins a record. This control was born out of the use of longer video clips along with music. While playing these video clips are not as improvised or spontaneous as triggering clips, this type of

control is necessary for syncing the visual beat to the audio beat. Figure 1 shows the initial

iteration of the set up:
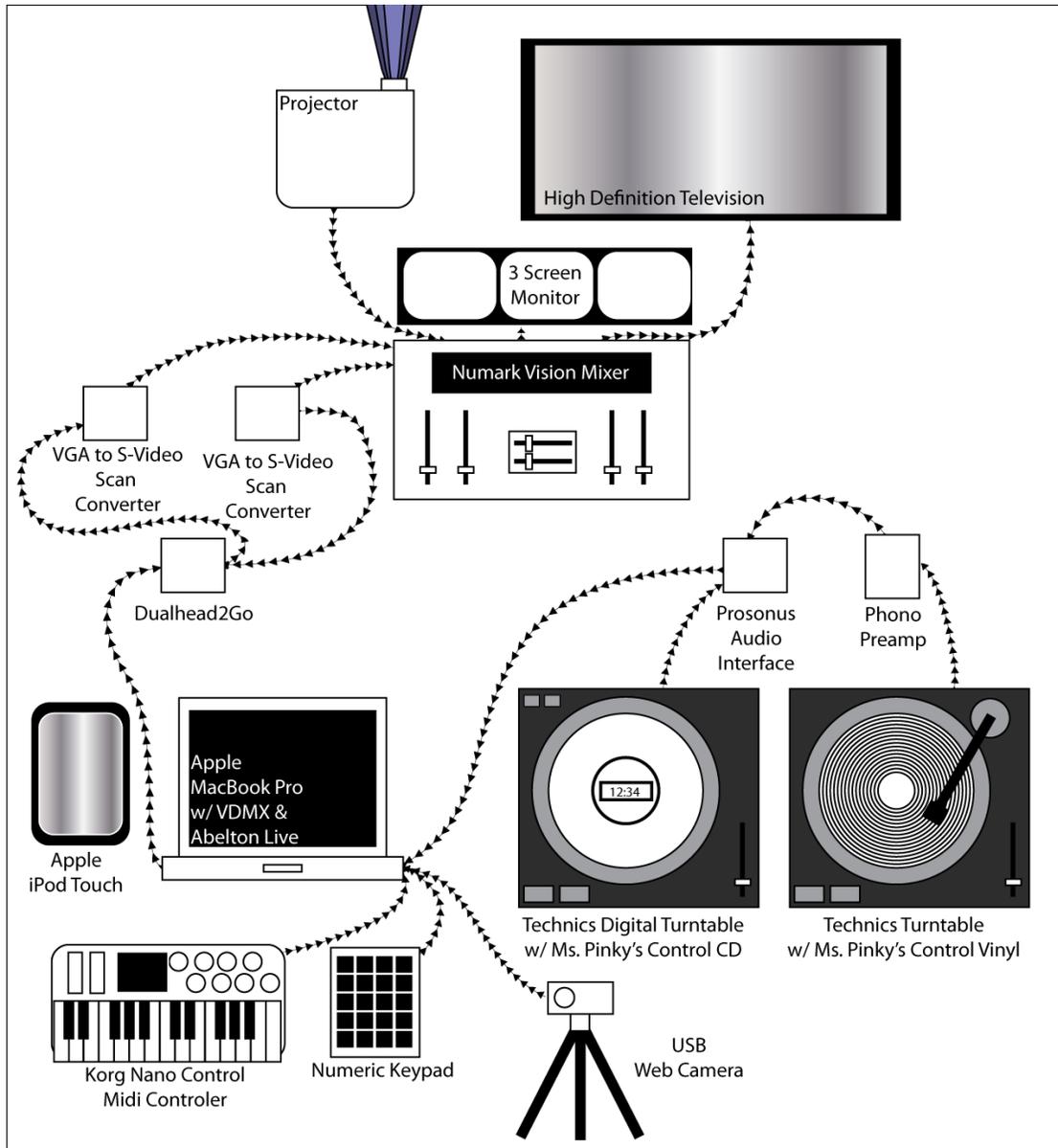
Figure 1: Equipment Setup 1

The main controllers are the Midi Keyboard and the Open Sound Control Turntables. In order to

drive and control longer video clips the artist used turntables. The turntables act like large jog

wheels, but unlike jog wheels, the turntables actually turn with the video. In order to do this an

audio signal that contains a sign wave and time code data is sent to the computer. A Prosonus audio interface converts the line level audio from the analog turntable, and s/pdif signal from the digital turntable into digital audio. The artist programmed built a translation application in Quartz composer that turns the signal from audio into digital Open Sound Control data, which is used inside of VDMX to control the video time code.

In order to control effects, a Korg Nanocontrol Mid Controller was chosen. This relatively cheep device is small enough to fit in a backpack or be attached with Velcro to whatever piece of equipment is available. A number of effects that are typically used in a performance are set up in VDMX and mapped to the sliders, knobs, and buttons on the Nanocontrol.

For triggering smaller clips, both a Numeric Keyboard and an Apple iPod Touch with an iPod app called "TouchOSC". VDMX sets up the clips to be triggered using a grid patch, called the media bin. This grid can be set to as any number of columns as desired. The numeric controller acts as a trigger pad for these clips. If there are more clips than buttons on the numeric controller the iPod Touch can be used to trigger them.

A USB Web Camera is also included to capture and manipulate the live video from the venue. A FireWire cable was used to play video data from an external hard drive. That video data must be accessed and played quickly or the visuals being displayed will drop frames, slow down, and possibly freeze. Thus a FireWire based camera is not suitable to also send digital video (DV) data due to throughput restrictions. The USB camera acts on another bus, and although it requires more processing to see the video, it does not create any drag on the clips being played through the FireWire bus. This camera does not have a microphone, and it collects video at 386 pixels x 248 pixels.

After manipulation the video is then sent to a Matrox DualHead2Go. This video card allows the second monitor of a computer to be stretched and split into two monitors. This effectively allows the operator or visual artist to output two video signals that can be combined on the hardware mixer, providing more possibilities for video manipulation. As the DualHead2Go only outputs D-Sub VGA signal, two small VGA to S-Video converters are used to convert the video to standard definition video, for the video mixer to use.

Connecting the Live Visual Performance to the Audience

The process was further complicated by my attempts to clarify the nature of the interaction between the audience and the visuals being displayed. For this latter perspective, surveys were created and administered to the leading performers in the field (20) as well as to patrons in (40) venues where the performances took place. These questions focused mostly on the value of narrative in live visual performance, but also lead to discussions that have been used to guide the artistic endeavors of this project.

The performers, as discussed in the next chapter, were selected by attending high profile events at the Winter Music Conference. This appears to be the best way to reach a large amount of performers, who came to the conference from all over the world. Due to connections with local musicians this author was able to gain access to areas that normal patrons did not have access to, and ask questions of the performers while performing. Because these particular performers, who from all around the world, were hired to play these high-profile events, then they would be a good selection of practical professionals, e.g. the every day VJ. It turned out to

be faster and easier to move into interview questions if the questions of the performers were asked and the answers written.

Helpers, and myself randomly selected the patrons for interviewing and surveying, during my show. In the 40-person sample people were approached who seemed interested in the visuals and people who did not. These surveys were primarily done in Miami and Orlando, and the 40-person sample size is about an average crowd for a normal nightclub even where visuals are presented.

Questions were created from what was learned from the literature review. Because there has been very little research into the content of live visual performance, the questions are very basic. These should be considered them a starting point into researching the content of live visual performance in the nightclub setting.

CHAPTER FOUR: FINDINGS

Equipment, Software and Development

The equipment configuration was simplified greatly over the process of implementing this project. A Korg Zero 4 Live control mixer, which is initially a DJ mixer, is now used in place of many of the control surfaces. This control surface is intended for use as a DJ mixer, but all of the controls, however, also send midi signals. This allows the artist to mix video in the same manner as a DJ, and more closely relate to the DJs that are performed with. This mixer lights up as well, which attracted quite a bit of attention, and as it is a DJ mixer allows the same sort of interaction with the audience that the DJ enjoys. All of the other equipment, except for a laptop computer, has been eliminated. More random access memory (RAM) was added to the computer as well as a cooling pad and laptop stand. This allowed for greater computer processing power, placing an emphasis on mobility and software powered mixing over hardware powered mixing and large unwieldy equipment. Figure 2 shows the final hardware setup used when there are no other visual performers. In the case that there are two performers in a night, the visuals signal that would go to the projector, is first tied into a vision mixer.
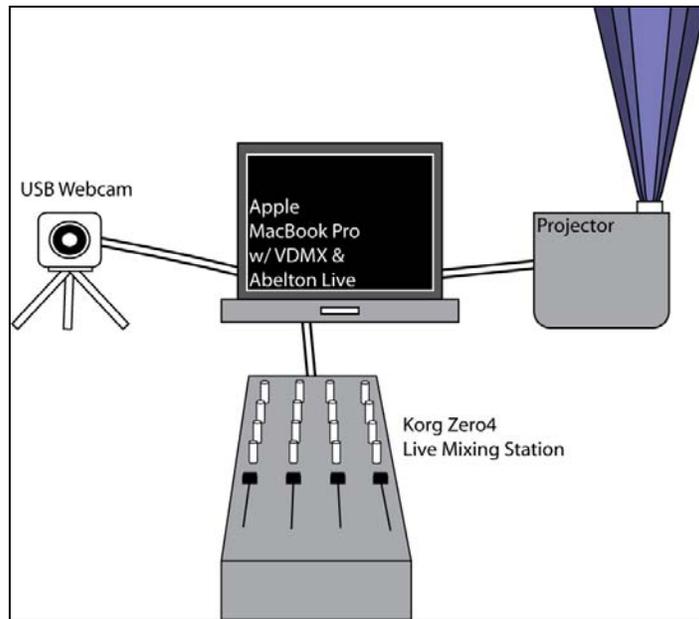
Figure 2: Equipment Setup 2

Figure 3: VDMX Interface 1

The VDMX interface, shown in figure 3, mirrors the mixing control station. Each of the 3 video channels is assigned to a channel fader. Each of the effects within each channel is assigned to the high, mid, low, and pan control knobs on the control surface, and the adjacent effects knobs have been set up to control the parameters within the effect. The software included a clock, which could also be called a metronome. The control surface includes an on the fly analyzer of beats per minute in a given song. This clock signal is sent from the control surface to the software and allows for clips to be trigger in a quantized manner along with the music.

Working in VDMX can be slightly daunting at first because you do have to set up your own interface. It does not come with any prepackaged ready to use interfaces. This presents a novice with a bit of a learning curve. Many iterations of the interface were constructed during this project, with the final being shown in Figure 3. Once the user recognizes the flow of information & processes the video goes through, from the media bin to the output window, VDMX becomes much easier to use.

Of special note, because many of these events often well exceed the maximum sustained decibel level of 85db for an extended period of time, one of the most important pieces of equipment is a good set of earplugs, to prevent Noise-induced hearing loss ("Noise-induced hearing loss," 2008).

<div align="center">Performer and Patron Surveys</div>

This first set of surveys and interviews took place at the fist annual VJ challenge at the winter music conference. This became the start of a dialogue with other live visual performers that helped shape the way the performances in this study were created.

- DVJ Vision started off with an introduction using Kubrick's 2001: A Space Odyssey. He used quite a bit abstract graphics, which didn't really tell much of a story. He was both a VJ and a DJ so he was able to sync the video to the audio and have a singing girl actually singing with the music. He used the vj equipment which was there, two Pioneer DVJs and a Pioneer Vision Mixer.

- Bluecrash, an Orlando based VJ, used VDMX to layer videos. His video all had a theme to it, but it did not match with the music being played. His video was themed to 50's television shows,

- DJ CFlo is actually a DJ who has incorporated video into his work. He was using the set up VJ equipment and mixing popular songs together like a turntablist DJ would, or even a regular house DJ. He did not use "eye candy" at all, and it could be said that there were small vignettes of story.

- VJ Foresight used visuals that were very glitch; they had a lot of repetition, and did not change with the music. His visuals seemed disjointed from the music.

- VJ Mad Motion, another Orlando based VJ, also used VDMX to layer videos. Her theme somewhat fit the music she was playing to, but she used the same samples over and over.

- Vj Sergio is a Russian based VJ, whose media was lost on the way to Miami. He only had about 15 clips to use in 8 minutes. He used Arkaos Grand VJ. His work was really good for what he had. He had a background with sprites flying around to the music. Because he only had a few clips to use it was repetitive, but so was everyone else's. Sergio won the event.

As the visual performers completed their performance I interviewed them, presenting the questionnaires as shown in appendix 1. 20 visual performers were interviewed all together. The

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following is a summary of those reflections:

As shown in Table 1, Forty percent (eight out of a total N of 20) of the visual performers considered narrative to be very important (5 of 5 in a Likert Scale 0-5 with 1 being not significant and 5 being 'very significant') in their work. 30% more consider narrative to be important (4 of 5). In other words over 70% of the performers rated story to be a significant part of their work. Only ten percent (2 out of 20) considered narrative to not be important at all. One of the visual performers said that narrative is subjective to the work, but if there is a narrative present, then it must be light, and not require much attention span. Due to the nature of the atmosphere this type of performance cannot be as deep as a Stanly Kubrick film, but should have the narrative depth of, *The Fifth Element*.

**Table 1: Visual Artist Question 1**
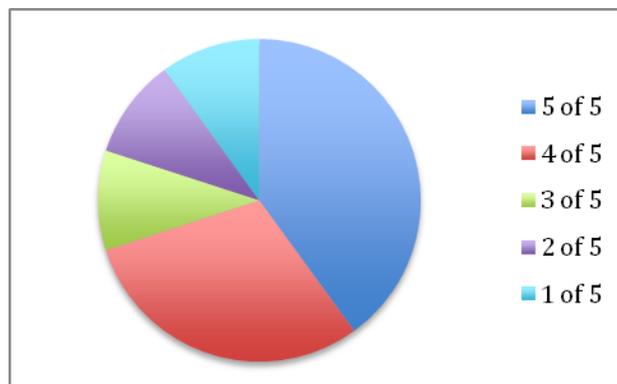
As shown in Table 2, Seventy percent (14 out of 20) of the visual performers considered the visual performance to add quite a bit to the audio performance. The other thirty percent (8 out of 20) consider it to add to it. One of the visual performers that I questioned considered the visual performance to be icing on the cake, while another performer, a world-class performer, who has pioneered visual performance at clubs for over 10 years, considered the visuals to be absolutely necessary in today's age of technology.

Table 2: Visual Artist Question 2
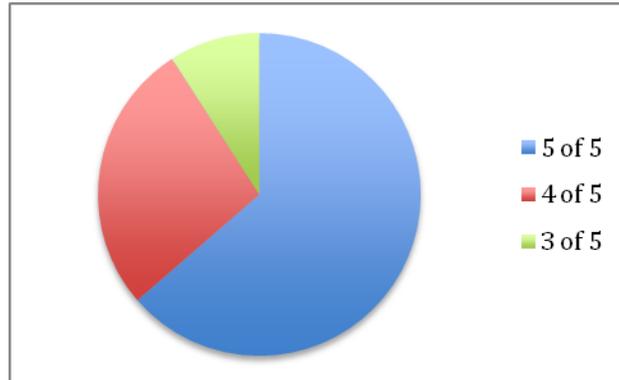
As shown in Table 3, Forty Five (9 out of 20) percent of the visual performers considered narrative to be very valuable in visual performance. Twenty percent (4 out of 20) considered narrative to be somewhat valuable. The other thirty-five percent (7 out of 20) did not see narrative to be very valuable in live visual performance. When asked why, the visual performers stated that most club goers aren't there to pay attention to the visuals, but rather to socialize and dance.

Table 3: Visual Artist Question 3
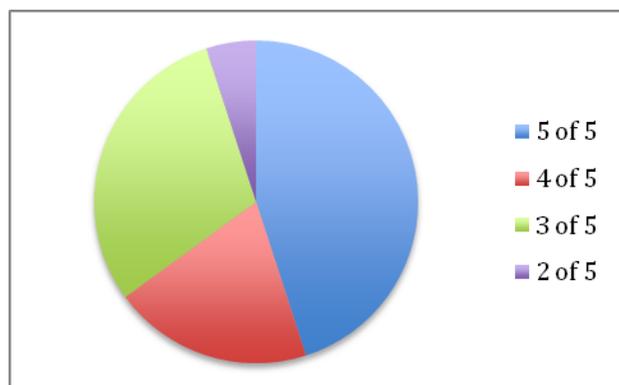
The last quantitative question, shown in Table 4, asked about the value of eye candy in live visual performance. Forty percent (8 out of 20) of the visual performers believed the eye

candy, or visuals that are integrated solely for spectacle, are valuable in a visual performance. Another thirty percent (6 out of 20) found eye candy as somewhat important, and the last thirty percent (6 out of 20) do not find them important at all. This drove some interviewing questions with many of the visual performers.

Table 4: Visual Artist Question 4
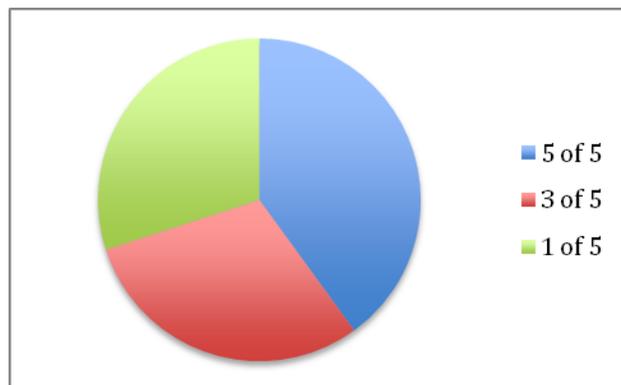
The last open-ended question asked what the participant believed would be the future trends in live visual performance. The answers were quite varied. The only answer that came up more than once was "bring the visual performer up on stage and let him perform along with the musician". Some other noteworthy answers were to create and standardize the equipment used to create the live visual performances. Every performer usually brings equipment and has to hook into a system that might not be compatible. This becomes a problem when a performer is bringing 200 pounds of equipment in rack-mounted cases.

The rest of the time spent in Miami was spent searching for interviews and examples of live visual performance during the winter music conference. A large majority of the visuals displayed had no narrative or meaning, or did not have a rhythmic display to them. The visuals were inserted with the audio with out any real connection.

The largest event of the week during winter music conference is the Ultra Music Festival, selling out its tickets this year to over 100,000 attendees (Jaidi, 2010). It has also been awarded best event for 5 years by the International Dance Music Awards ("25th annual international," 2010). As visual performance is becoming a mainstay in the dance music world, every act at Ultra Music Festival had a visual accompaniment. Most of the visual accompaniments were not based in story. Rather, they contained visuals that reacted to the music being played, and displayed graphic elements like circles, symbols, and textures to convey that music.

The performance that appeared to contain the most narrative construct was "Rabbit in the Moon". This band produced their music and visuals together to enhance the emotional message. While their act did not have a sold narrative, it did tell a story, plus they used live performers to be the characters. Further search of the other live visual performances brought about the same results: no narrative.

The last phase of this research project was to see how the audience reacted to the theories learned from the first round of surveys with performers, and the theories learned from the literature review. 40 audience members were surveyed and many more were interviewed. The first open-ended question asks the audience members to define the main theme or common idea. Most of the answers, as they were taken from audience members that do not know all of the terms necessary to discuss this type of art, were fairly common, non-art, reactions, such as, "It's cool to look at!" or "It's visual music."

When presenting a longer video clip such as the created, *O Brother Where Art Thou* remix, (Figure 4), the artist was able to grab the attention of the audience for a short period of time. This artist believes that this momentary lapse, or break in the flow of the atmosphere can

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be directly related to the exposure of the content. The movie *O Brother Where Art Thou,* was very popular (grossed $45 million), was nominated for 2 Oscars, and is recognized, and thus, easy for many to associate with. In a study done at Washington University comparing audiovisual presentation to audio presentations researchers found that a viewer enjoys a piece of music video more when accompanied by a video, and even more if they are familiar with the content (Bilandzic, 2005), Not only does this validate the use of visuals for interpreting the music for an audience, but also it proves that using familiar visuals will allow the audience to connect more with the music.


Figure 4: A Clip from the *O Brother Where Art Thou* Remix

This author avers that the use of this video does not infringe on US copyright laws for three reasons. First, as stated in section 106 & section 110 of the US copyright law, using media from this movie in a manner did not come in to a "direct or indirect commercial advantage". Secondly, less than ten percent (10%) of the original movie (six out of a total of 106 minutes) was used. Third, multiple effects and transitions were added to bring the music video closer to

the style of a live visual performance. For these reasons, it was determined that the use of this material falls under the "Fair Use" rules of section 106 (Copyright law of, 2009).

As shown in Table 5, the second question for the audience asks about the value of narrative in visual performance. Forty percent (16 out of 40) of the audience, the largest section, stated that narrative is not very valuable at all, with another forty percent (16 out of 20) answering 2 of 5 or 3 of 5 (in a Likert Scale 0-5 with 1 being 'not valuable' and 5 being 'very valuable'). This proves to further the artist's theory created in the visual artist questioning, that for the most part, we do not have to display long narrative driven sequences to do the basic job of a visual performer, but as found in the first question to the audience, and through questions audience members, one or two short narrative driven sequences will only add to the experience.

Table 5: Patron Question 2
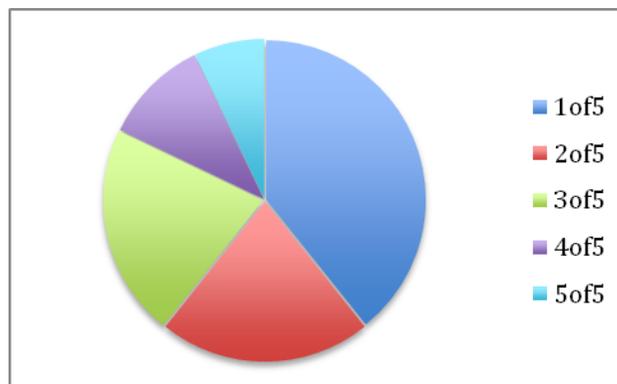
The third question to the audience, as shown in table 6, asked about the value of eye candy, and fifty-seven percent (23 out of 40) of the audience answered either 4 or 5, or that they thought it was very valuable. Eye candy, as defined for purposes of this project, can be described as simple designs, which have very little meaning by itself.

Table 6: Patron Question 3
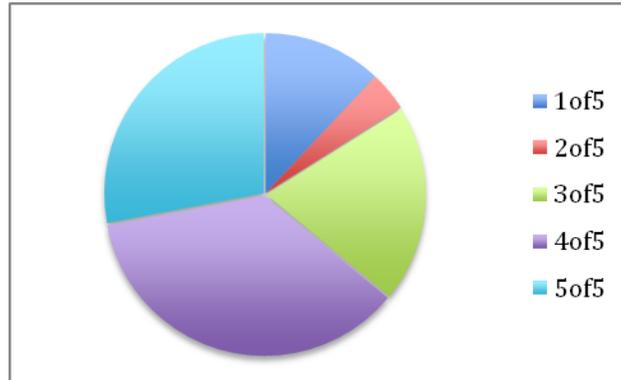
The fourth question to the audience, as shown in Table 7 asked if the audience thought whether it was more exciting to watch a visual performer then to attend a movie in a theater, and seventy-five percent (30 out of 40) of the audience answered 4 of 5 or 5 of 5 for the performer in a club.   As this is a more social event, allows for people to talk and dance together, we can only assume that the general atmosphere is what creates the excitement, and the visual performance simply adds to it. As stated from my previous interviews of the visual performers, visual performance is like the "Icing on the cake", but if we only get a short period of attention from the audience, where as in a theater the audience is captive, then we can assume that the visual performance is not as important to the overall atmosphere.

Table 7: Patron Question 4
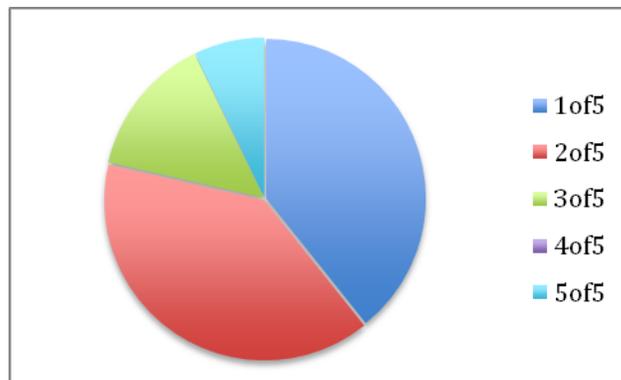
The fifth question for the audience asked how compelled they would be to go to a performance that is advertised as being a live visual performance that accompanies a DJ or Musician, rather than a musical performance by a DJ or a Musician without the live visual effects. Fifty-five (22 out of 40) percent of the audience stated that they would be more compelled to attend an event with a visual artist performing. Only four percent said they would not be compelled. Of special significance is that, whenever a live visual performance was taking place, at least one or two people walked up to the visual performer and asked what he was doing. Common comments like, "that is the coolest thing I have ever seen", or "wow! How are you doing that?" Based on these results, I became fairly confident that people generally enjoy the performance with whatever content that might be displayed. Adding narrative and meaning to the visuals have only added exponentially to the value of the experience.

Table 8: Patron Question 5
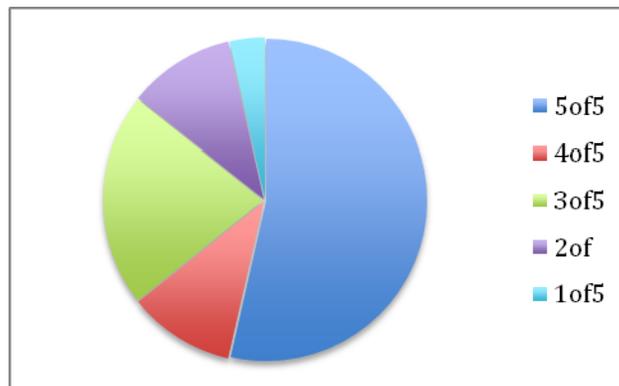
The last question asked if the audience thought when the DJ or Musician and Visualist or VJ worked together they made for a more pleasant experience then just one alone. Forty-five percent (18 out of 40) of the respondents answered either 4 or 5, and only twenty-five percent (10 out of 40) answered with a 1 or 2. This question goes hand and hand with the last question and states that most people enjoy the fact that there are musically driven visuals being presented.

Table 9: Patron Question 6
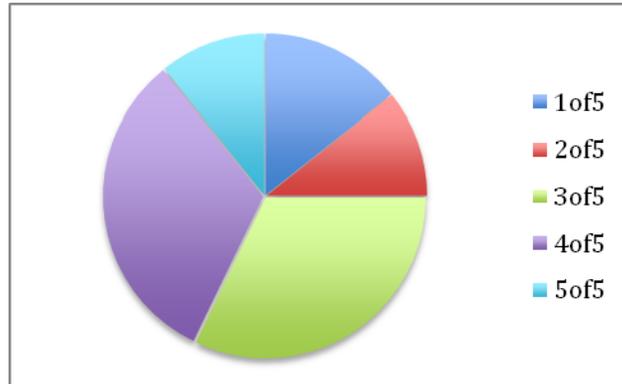
CHAPTER FIVE: CONCLUSIONS

Results from Surveys

The work of a live visual performer is a cloudy sea of uncertainty. Based on the vast diversity of styles witnessed by this author, that there is no one correct way to display visuals along with electronic music. This study and accompanying body of work attempts to provide some rationale and guidance to a field that is not new, but that is struggling to find its place in the world of performance.

My research has shown that in the electronic dance music industry, live visual performance is very well received. I believe this because it gives the audience another form of stimulation. Through an interpretive interaction with both the music and the video-mixing interface the visual performer creates a sort of social metronome, which allows the audience to connect to the music being played in a visual way. The level of narrative that is displayed does not have to be great, in fact, most of the time it will not be noticed, or the attention span of the audience will not last for long enough to display a longer form narrative and still have the message received. Having some depth in the symbols that are displayed, forming a visual sentence with meaning, will certainly add depth to the performance.

The spectacle created grabs the patrons' attention. By using visuals that created a meaning we can communicate ideas. For example, a silhouette of a man break dancing overlaid on a group of protestors has an implied meaning. The visuals may be pretty and might have a certain amount of 'wow' factor, but the combination of the two graphics came together to form a sentence, ("Dance for peace" in this example). Many of these visual metaphors are a way for

visual artists to use the language to create meaning while still conveying the same aesthetics that have become regular and accepted by patrons.

This hardware and software systems developed went through many iterations, and shows how a relative small amount of equipment could be used to create visuals, allowing the live visual performer to carry around and instrument like a musician. This compact system can be adapted to many different kinds of live visual presentation, such as broadcast video, and, further, as it is fairly simple and straightforward, it could even be used to teach narrative to children. Allowing a child to play with a story and quickly produce something that is tangible would be quite rewarding (Kenny,2007; Kenny & Gunter, 2006).

Future Research

Further investigation is needed to discover if the audience is simply looking for eye candy, and if the audience gives meaning to eye candy unconsciously. One thing that I learned from these experiences is that the timing the eye candy to the down beat of the currently playing song gives the audience a visual metronome, or cue about when to dance. This might aid in giving rhythm and a better ability to dance to people who are more inclined to use there visual senses over there auditory senses. In effect, it may provide deaf people a means to understand the music better. This could be the subject of an entire study of by itself.

Further lines of research into this field should consider simple signs and the rate at which they can be displayed and understood. If the best way to reach the audience with a message is through quick and simple sign based visual sentences then how much of this information can we display to the audience while maintaining a satisfactory level of comprehension.

This project worked with only a few genres of electronic dance music, in a very specific type of setting. Further research might investigate the amount of narrative comprehension and enjoyment with many different genres of music, as well as in different settings where the audience is more contained to watch the show. For example, at a symphonic recital, the audience might be more inclined to pay attention to the visuals that accompany the music because they are not socializing.

The engineering and equipment in this study ended up creating a fairly portable live video editing system, and parts of it were actually used in a project called Interactive Expeditions. Further research and engineering might investigate this system as a small video broadcast system. As stated above, full resolution video cannot be acquired from a video camera directly into the FireWire bus while the computer is accessing multiple clips from a FireWire hard drive, but a dedicated video I/O device might be suitable for allowing this type of video mixing with the system created.

The social metronome that is created in this project, gives a visual cue as to when the music is changing, the beat and measure of the music, and the general mood as interpreted by the live visual performer. Further research into using this as an assistive technology for the hearing impaired might allow for people who normally would not like this setting, because they cannot enjoy the music, to feel more of the message that is trying to be conveyed through the visuals.

APPENDIX A: QUESTIONS FOR LIVE VISUAL PERFORMERS

Questions for Visual Performers

1. On a scale of 1-5, how important is narrative in your work?

    Not important 1 2 3 4 5   Very Important

2. Do you think your work hinders or adds to the performance of the musician?
    Hinders   1 2 3 4 5 Adds

3. What do you think the value of narrative in visual performance is?
    No Value   1 2 3 4 5   Very Valuable

4. What do you think the value of 'eye candy' in visual performance is?
    No Value   1 2 3 4 5   Very Valuable

5. What other directions/trends would you like to see live visual performance to take?

_____

_____

_____

APPENDIX B: QUESTIONS FOR PATRONS

Questions for Patrons

1. What do you think the main theme or common idea that was presented in this visual performance?

_____

_____

_____

2. On a Scale from 1 to 5: What do you think the value of narrative in visual performance is?

      Not Valuable 1   2   3   4   5   Very Valuable

3. What do you think the value of eye candy in visual performance is?

      Not Valuable 1   2   3   4   5   Very Valuable

4. On a scale from 1 to 5: Do you think it is more exciting to watch a performer exhibit visuals at a club or watch a movie in a theater?

      In a club   1   2   3   4   5   In a theater

5. On a scale of 1 to 5: How compelled would you be to go to a performance that is advertised as being a live visual performance that accompanies a DJ or Musician, rather than a musical performance by a DJ or a Musician without the live visual effects.

      Not Compelled   1   2   3   4   5 More Compelled

6. On a scale of 1-5: Do you think when the DJ or Musician and Visualist or VJ work together they make a more pleasant experience then just one alone?

      Not Pleasant   1 2 3 4 5 More   Pleasant

APPENDIX C: NOTICE OF EXEMPT REVIEW STATUS

University of Central Florida Institutional Review Board
Office of Research & Commercialization
12201 Research Parkway, Suite 501
Orlando, Florida 32826-3246
Telephone: 407-823-2901, 407-882-2012 or 407-882-2276
www.research.ucf.edu/compliance/irb.html

Notice of Exempt Review Status

From: **UCF Institutional Review Board**
          FWA00000351, Exp. 10/8/11, IRB00001138

To: **Henry Lenz**

Date: **May 05, 2009**

IRB Number: **SBE-09-06179**

Study Title: **Narrative in Live Visual Performance**

Dear Researcher:

Your research protocol was reviewed by the IRB Chair on 5/5/2009. Per federal regulations, 45 CFR 46.101, your study has been determined to be **minimal risk for human subjects and exempt** from 45 CFR 46 federal regulations and further IRB review or renewal unless you later wish to add the use of identifiers or change the protocol procedures in a way that might increase risk to participants. Before making any changes to your study, call the IRB office to discuss the changes. **A change which incorporates the use of identifiers may mean the study is no longer exempt, thus requiring the submission of a new application to change the classification to expedited if the risk is still minimal.** Please submit the Termination/Final Report form when the study has been completed. All forms may be completed and submitted online at https://iris.research.ucf.edu.

The category for which exempt status has been determined for this protocol is as follows:

2. Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey or interview procedures, or the observation of public behavior, so long as confidentiality is maintained.
    (i)   Information obtained is recorded in such a manner that the subject cannot be identified, directly or through identifiers linked to the subject, **and/or**
    (ii)   Subject's responses, if known outside the research would not reasonably place the subject at risk of criminal or civil liability or be damaging to the subject's financial standing or employability or reputation.

No consent form used in study.

All data, which may include signed consent form documents, must be retained in a locked file cabinet for a minimum of three years (six if HIPAA applies) past the completion of this research. Any links to the identification of participants should be maintained on a password-protected computer if electronic information is used. Additional requirements may be imposed by your funding agency, your department, or other entities. Access to data is limited to authorized individuals listed as key study personnel.

On behalf of Tracy Dietz, Ph.D., UCF IRB Chair, this letter is signed by:

Signature applied by Joanne Muratori on 05/05/2009 04:07:58 PM EDT

IRB Coordinator

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