

OVERVIEW

Sound & Vision is a venture into experimental sound creation and synchronized live visual performance. It is a study of sound, image, notation and expressiveness. The focal point of this study is to inform the visual content of a live music performance through design driven inquiry.

Sound & Vision is a body of work that investigates what the role of a media designer in music could be. The goal is not to answer questions, but to generate new ones. Through the use of design research, collaboration, and interactivity, this thesis project creates these new questions, and plants the seed for a practice that will continue to grow. It is about design going deeper than just creating album art or a music video. What does it mean to be a visual maker/thinker with a hybridized practice in music?

Technique:

A common thread in each of my projects is collaboration. I have relied heavily on input from others. I asked for contribution from musicians, friends, and people from all over the world (via Mechanical Turk). It is critical to my practice to have individuals I can collaborate with on a high level. I am using design research and “learning through making” as a means to develop methodologies and knowledge in my field. Even the failed projects are interesting in what they reveal. The emphasis is not always finding the right answer, or the most beautiful outcome; the focus can be on the process.

Audience

The nature of my work speaks to different audiences because it is cross-disciplinary, cross-modal and cross-media. As a media designer, I want to state my boundaries, who my audience is and what current work I am in dialogue with.

Experimental research projects are in line with the type of work that comes out of graduate design programs. Thus, these research projects are inherently in discussion with other graduate design programs. The applied work that I did with musicians is made for musicians and fans of music. The primary audience of these projects is very different from the research-based projects. A music fan can see the visuals I created or hear the songs I curated and enjoy them at face value. They could also go deeper and see the process, historical references, motives, and cultural implications. This work can be situated in different circles: music, design, art and VJ culture.

Visuals:

Visuals have long been a part of musical performances; now they are a necessity. Stage productions have become a multi-million dollar endeavor, and technology has developed to the point that designers can think beyond the normal conventions. Artists like Kanye West and U2 have based their whole tour on the multimedia experience (Kanye’s Glow in the Dark tour and U2’s 360 tour). While stage production and visuals are not a new idea, the scale of these projects has evolved into a spectacle of super bowl proportions. The designer becomes the star as well. VJ is no longer an acceptable label.

With publications like *Make Magazine* and *Instructables*, anyone can get their hands on interactive toolkits and how-to guides and incorporate interactivity to any project. Cell phones can become a standard interactive tool for live shows. The space is now activated; it is up to designers to use this new hybridized medium to its full potential.

Music

Musicians can be inspired by a number of things. A song can be inspired by life experiences, a moment in time, art, past musicians etc. Songs can also be dictated by constraints. This is where my entry point for creating music lies. Through directed studies and prompts, the input of a designer can help shape the formative steps of songwriting. How often is a rap star handed a book of typography and asked to interpret it musically? How many rockers are open to composing a song based on a designer's ambition? How many of your favorite songs are based on a piece of interaction design? These are all questions I am posing.

BACKGROUND

Starting points (questions):



This body of work began from [Stop Making Sense](#). I've always loved Talking Heads, but after a year of graduate school, I viewed this film with a different eye. What makes the film unique is the attention to the visual. David Byrne used a

giant suit to make his head look smaller on stage, and Jonathan Demme used the stage as a narrative element. Byrne said "Music is physical, the body understands it before the mind." He wanted to emphasize this with his performance. The movie begins with Byrne alone on a well-lit stage, with an acoustic guitar and a boom box. As the set progresses, more pieces of the band join him on stage and the lighting changes into a full-blown visual show.

I decided I wanted to make projects inspired by this movie. If music is physical, how can I investigate this statement? How can a designer become the performer? I used the big suit as my starting point, but even as my thesis changed and developed, I constantly looked back at this film for inspiration.

How can sound create visuals and how do visuals create music? As technology develops, does it aid the translation or hinder it?

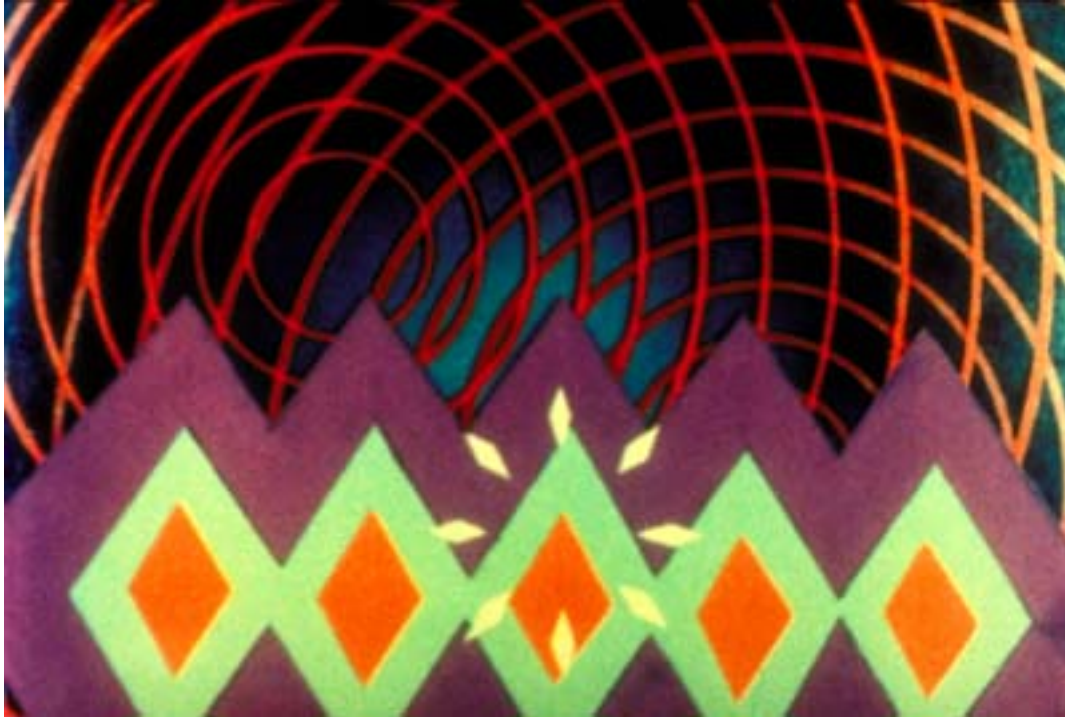
What is the new role of a media designer in the conceptual thinking and applied creation of visual music?

What is useful about practice-based research in the field of visual music?

Cultural Context:

The most critical aspect of my work is the distinction between what I am doing and what a VJ does. A VJ (video jockey) is an artist or performer who creates visual art for concerts and clubs, in conjunction with a musician or DJ. Often, the visuals are made separately from the music and have no dialogue with the musical content. The visuals are usually stock video footage and tend to be added as an afterthought. The projects I have made are in rich dialogue with the content and highly focused on methodology to obtain an end product that is unique to the artist or project.

Historical Context:



As I began to develop visuals for Nosaj Thing's live show, Oskar Fischinger's and Len Lye's names became important precedents. Their work used simple shapes and colors to synch perfectly with the music. The result is both abstract and beautiful. The earliest version of the visual show was made using video footage. I developed storyboards and focused on developing a narrative with short video clips that were mixed together. In the end, this version didn't make it past my 4th term review. However, I did stick with the project and drew on Fischinger for inspiration in the final version.

How does my work relate to these artists?

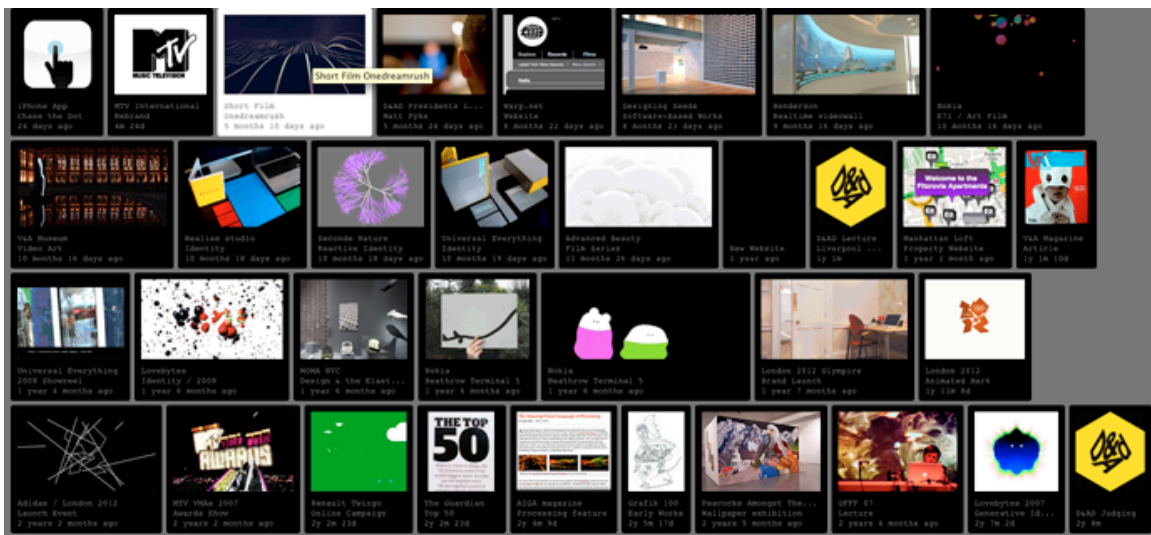


Andy Warhol's Exploding Plastic Inevitable is the most relevant influence for this investigation. Andy Warhol organized this multimedia event in 1966, which featured music by The Velvet Underground and screenings of his films. At the time, this kind of visual show was not being done in rock and roll. This allows me to do these types of projects. Andy Warhol is responsible for it- his ideas are ubiquitous in our popular culture, but I have always considered him to be an influence on my work. The Exploding Plastic Inevitable (EPI) is most similar to what I was trying to accomplish with The Visual Show. It is an artist working closely with a musical act, to create one experience that is cross media.

Current Methods:



James Houston's Radiohead remix is another important example of my interests. This project captures an experimental approach to create music using unconventional methods. Houston explains his work: "I grouped together a collection of old redundant hardware, and placed them in a situation where they're trying their best to do something that they're not exactly designed to do, and not quite getting there. It doesn't sound great, as it's not supposed to."



Universal Everything is the best example of a current studio that aligns with the kind of practice this thesis work will develop into. "Working with everything from pencils to generative design, *Universal Everything* is a diverse studio at the crossover between design and art." Their projects range from rebranding MTV to stadium visuals to designing a project for *Design and the Elastic Mind*. The work is not classified by or limited to one medium or technique.

PROJECTS



Nosaj Thing Visual Show:

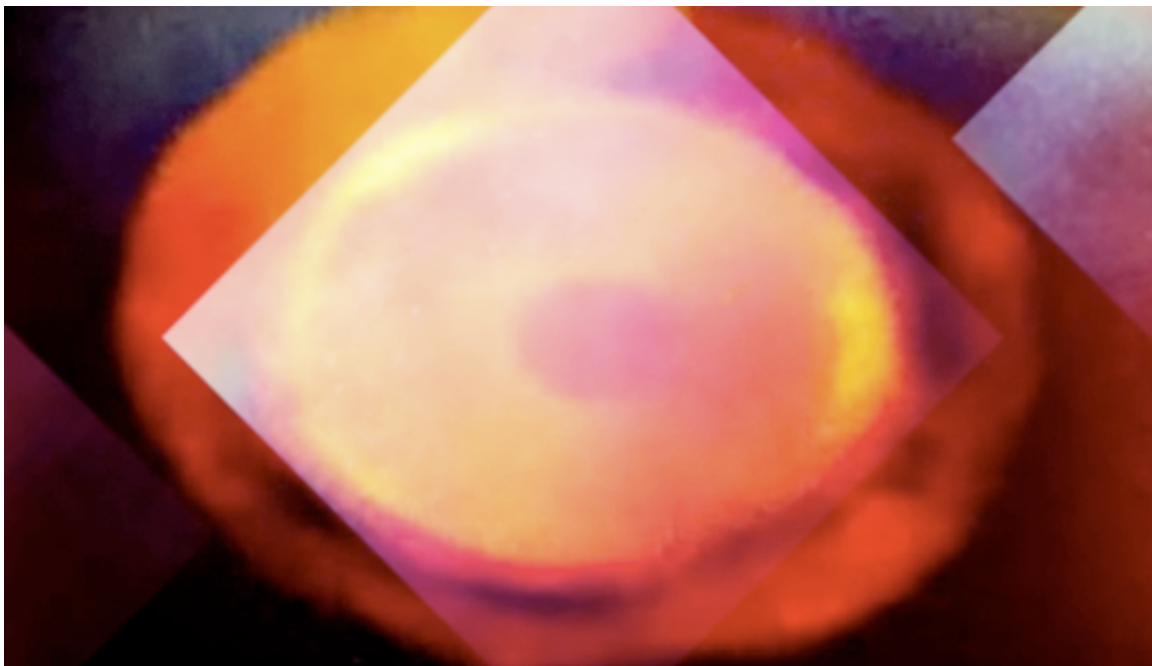
The performance is focused around disorientation and using the projector as a light source. The first half of the show is dedicated to slowly building a visual style. The images are black and white lines and squares. The positive/negative space is used to create rhythm that is synced with the audio. As the set progresses, the imagery becomes less abstract and focused less on light. Patterns begin to form and space begins to open as if the two dimensions exploded into a third. The relationship the graphics create with the performer is key. As the graphics become more spatial, the performer flattens, becoming a 2-D cutout version of himself.

Process

The Visual Show was the first project in my thesis studies. I spent the better part of a year working on this project, and it had many iterations. I began trying to answer my first research question- How can sound create visuals and how do visuals create music? I thought the right approach would be to program software to accomplish this. I learned Max/MSP and attempted to develop a show based on this software, but the end results were not dynamic and felt so cold. It lacked the aspect of liveness, the most important qualities of concerts. I began to use a VJ mixing software, VDMX, to create live effects on footage I shot for each song. Each song used 2-3 video clips; the look was filmic, but not dynamic enough for Nosaj's music. In the end, the approach we used was based on simple shapes and light. Using the projector as a light source was much more effective than the previous versions, and fit perfectly with Nosaj Thing's style of music and performance.

What Am I Investigating?

My investigation was lead by my research questions- what does it mean for a designer to be the performer? How can sound create visuals and how do visuals create music? I didn't exactly get to the point where I could use sound to create visuals, but instead I was able to create a set of visuals that mimicked the way the sound is organized. Each song contains pieces, parts of drums, synthesizers, bass, etc. I decided to use this structure to constrain our performance. Because we couldn't use the sound to create visuals live, it enabled us to perform our visual set live, in concert. It also led me to conduct every experiment and project that followed, each is inspired or an offshoot of the Visual Show.



A Visual Prompt:

After the earlier sound to image translations (link to it), I found that the results I was getting were not musical. People submitted files of themselves playing guitar, but it lacked the richness that a musical composition could have. The data felt more like doodles than a finished piece. So I asked 5 musicians I knew to compose a song based on a video I made. The video is 55 seconds of liquid light footage that was manipulated and layered. I asked them to not think of it as a score, but to use the piece as inspiration for songwriting. The length of the finished song was dependent the musician, not the video. They could make their composition perfectly synched with the visual, or use it as a starting point for a 10-minute opus.

Process

It was crucial to get responses from different genres of music in order to see how the visual translates. I reached out to Nosaj Thing to get the project started. Once he was on board, I asked two musicians who make rock music to contribute-

Chris Larsen from Sacramento's Buildings Breeding and James Higgs from Brooklyn based Spanish Prisoners. I also asked two friends who make experimental music; Jonathan Almaraz from the Sacramento based Bulbs and Kevin Corcoran, also from Sacramento.

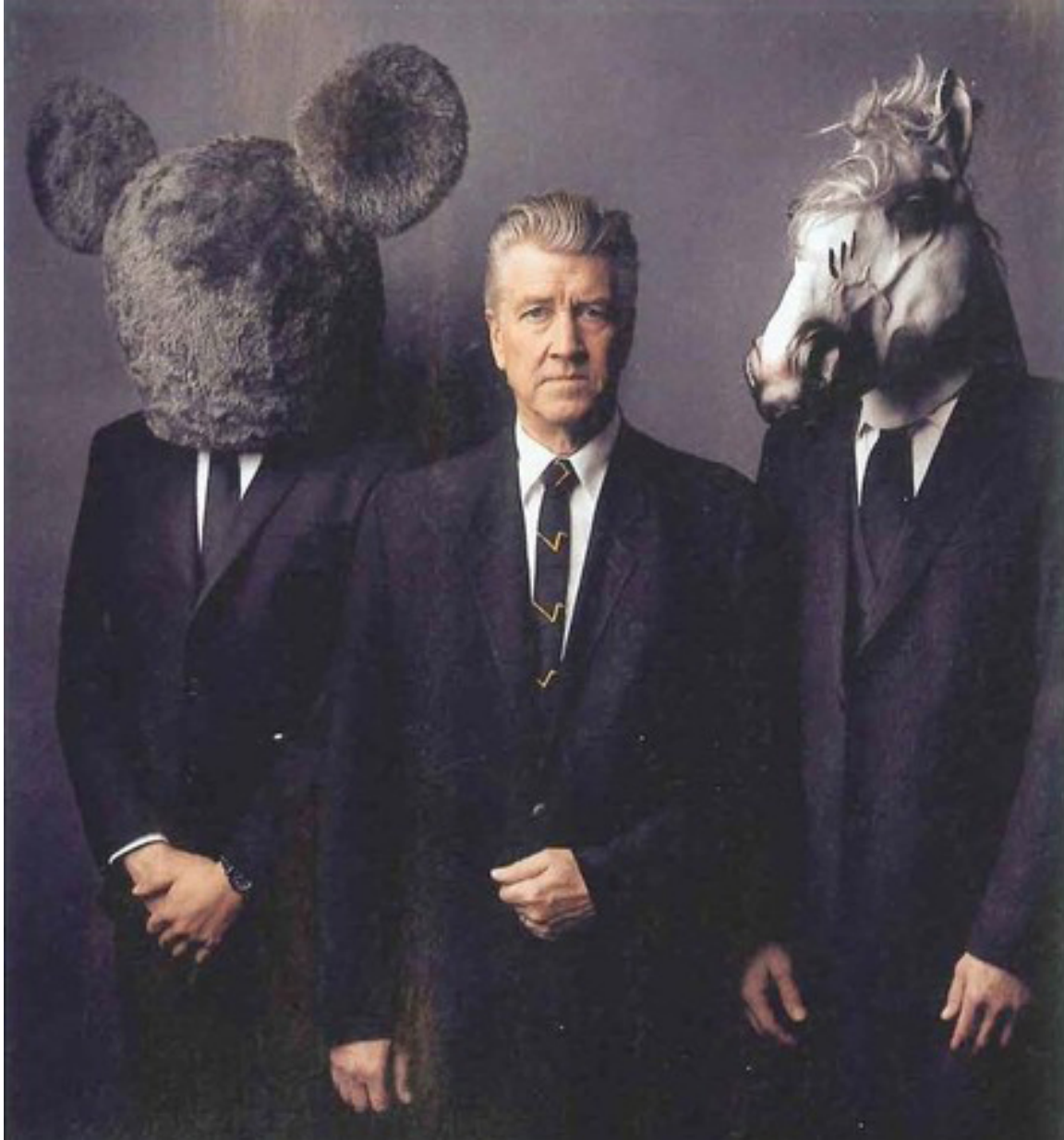
What am I investigating?

The ultimate goal is to use my ability as a visual maker to influence or inspire the creation of music. I am challenging the question of how a musician collaborates with a designer. I want to make a contribution in music, but how do I make those contributions? This Visual Prompt, like my other research projects, is attempting to use an alternative method for generating content. The ideal situation would have one or all musicians using the song for their own album material. Granted, this technique has been used before for film soundtracks and art projects, but the emphasis for this project is finding my place amongst musicians and designers. It helps define the work I will pursue in the future.

Results

The songs I received in return all captured a certain moodiness that comes through in the inaudible prompt. Nosaj Thing composed a soothing synchronized track, uncharacteristic of his usual style. He embraced the visual and composed the song as a professional sound designer. Kevin Corcoran recorded his track in an old key-making shop, 4 feet wide and 20 feet deep, using an old weather radio and mixer feedback. Bulbs recorded his track after a night of bike rides and breathing practice, the focus of his track is subtlety. Chris Larsen said he was going to use the two tracks he recorded for his own album. Larsen said "I am going to stick with this and make an album..." I didn't expect this to be the response on the first try, but is encouraging to refine this project and produce a full length album.

Relevant Discourse



A *Visual Prompt* is most similar to the recent album by Danger Mouse, Sparklehorse and David Lynch, **The Dark Night of the Soul**. This collaboration features Dangermouse and Sparklehorse along with vocal contributions by Iggy Pop, Frank Black, Julian Casablancas and others. The album has an accompanying book that has over 100 photos by Lynch and also an exhibition that was shown at the Michael Kohn Gallery in Los Angeles. The album has not been released because of legal disputes with EMI, but has been hugely successful and was awarded album of the year by GQ.

EXPERIMENTS



Blind Pencil/Marker:

This study began with a conductive pencil that makes a buzzing noise as you draw. I used an Arduino kit, called Drawdio as a research tool. My interest was very focused at this point: How can I translate music into an image? What makes the translation meaningful? I had already used a computer to literally translate the audio file of a song into its respective visual data, but I found this process to lack character. Music is powerful because it can evoke emotion. Emotion is not a quality that is quantifiable, so why should I use a computer program to translate a song for me?

Process

Using the buzzing pencil, I asked two of my classmates to draw portraits of musicians while they listened to their music. They were told to use the pencil to draw, but they also had to make a beat that coincided with the song they were hearing. By having a person translate the music manually, the visual (portrait) is directly affected by the music- in real time.

What am I investigating?

How can I influence a person to use a piece of music to determine the aesthetic of a visual?

The idea was serendipitous. I found an Arduino kit, *Drawdio*, online that allowed anyone to turn almost anything into a Theremin. The presentation of the kit on the website showcased the amount of fun a child could have using the pencil. The kit was clearly marketed towards children, encouraging kids to start building these types of devices at a young age. I took this kit and used it for my research project. How does a person draw music while listening to it?

Marker Iteration:

The second iteration of this project uses a larger canvas for the users to draw

on. The first version confined the person drawing to an 8.5" x 11" sheet of paper, so their movements and gestures were understated. Using a large sheet of paper and giving them a wall to draw on enabled their movements to be more expressive.

In this version, the portraits became the focal point, as opposed to the buzzing pencil. The outcome of this iteration was large portraits, which were made with graffiti markers, so the lines are much bolder and expressive than the pencil version. Because the portraits are so large, the individual strokes the user made became less important. Instead, a portrait was developed over the course of the 3-4 minute songs, and they used the full time to create the portraits. In the pencil iteration, they did not use the full length of the song to finish their portraits.

Still, there are many layers to the project that the users must adhere to. They had to listen to the music, be mindful of the buzzing marker, and also reference the portrait of the artist as they drew. They were able to do this, but I wanted to simplify the process, hence the 3rd iteration, the Blind Fold version.

Blind Fold Iteration:

This version uses the same buzzing marker as the last iteration, but the user is blind folded. They are told not to draw what the artist looks like; instead they must draw the rhythm and beat of the music. The Blind Fold iteration removes any concern of formal qualities while drawing. The user does not have to look at a portrait of an artist, and does not even have the ability to look at the paper. This frees up their ears and allows the user to solely focus on the music, and how their arm movements are relating to the song.

The drawings turned out to have a rhythmic quality to them that was not seen in the first two versions. The focus becomes less about the figure and more about the drawing mechanics. How does a person respond to a drumbeat? What does a droning vocal look like? How do you draw a build? These questions can all be seen in the documentation of this iteration. The short answer is: in rhythm.

Relevant Discourse:



The question of drawing mechanics and the relation of the visual to other media related to a long-standing interest in these music studies. *The Mystery of Picasso* is an influence for the blind drawing studies in regards to technique. The director, Henri-Georges Clouzot filmed Picasso painting a number of canvases, with a camera filming his creative process at work. Clouzot used a special transparent canvas so Picasso could paint from one side, and the camera could film the other. This effect creates a narrative on the canvas. I couldn't help but be influenced by this film as I filmed my own drawing experiments. The technique is different, but the visual outcome is similar.

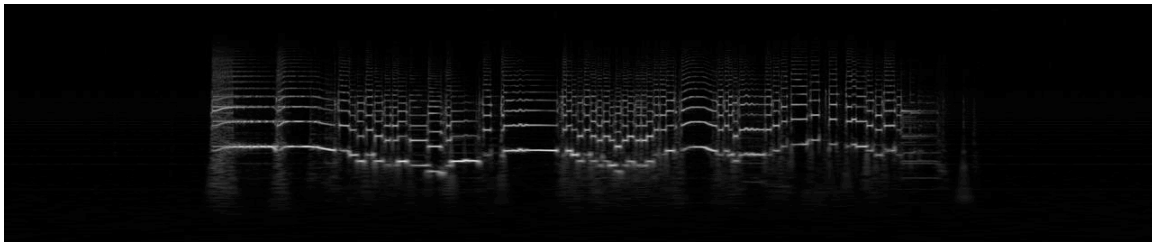


Image to Sound translations:

Translation became an interest while working on Nosaj Thing's Visual Show. The early ideation for that project involved Nosaj's Ableton Live set controlling

parameters in Max/MSP and Processing, to create live dynamic visuals perfectly synched to his music. This would allow for the visuals to be solely created through his music, live. That idea never came to fruition, but is explored in this study. The emphasis is not on the technology, but how a person interprets technology. Using a program that translates .wav files into a .bmp image, I asked users of Amazon's Mechanical Turk to play what they think the image sounds like. I sent out a video clip that had no sound, just a line that moved across the image to keep time.

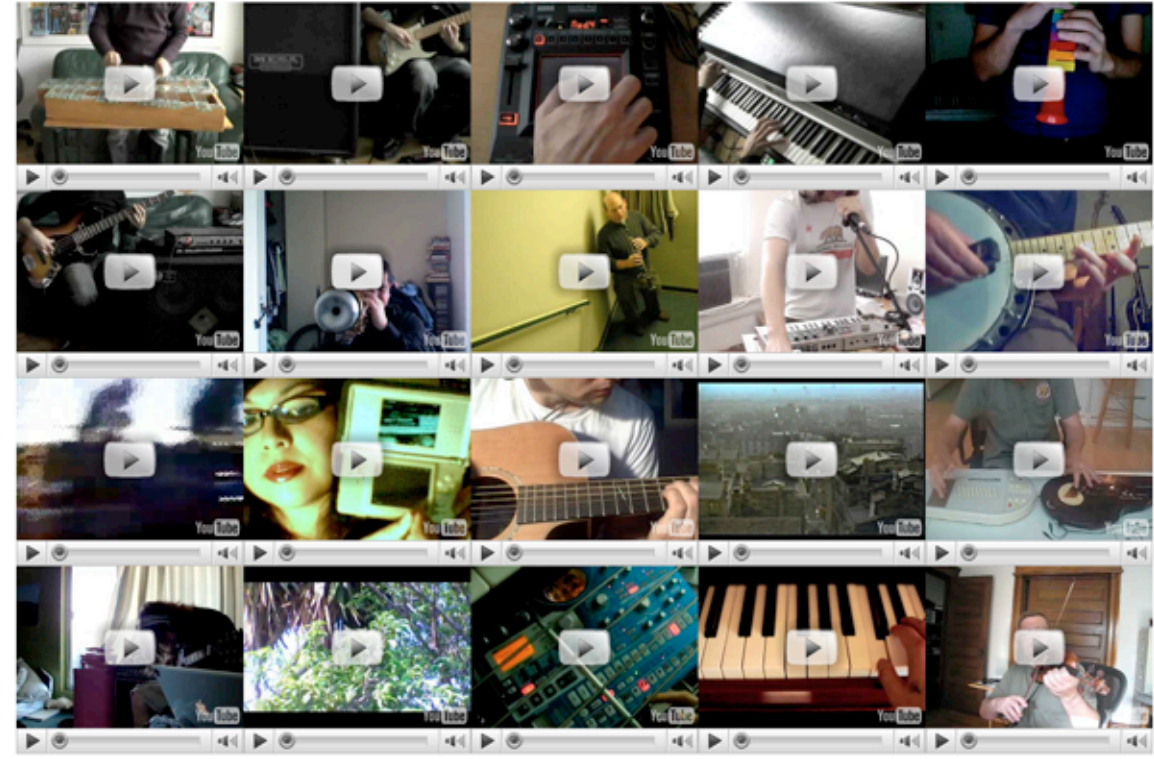
How does an image get translated into sound? Is it through the computer; is it through the human eye? Is it both? Can there be a magic box that can turn any graphic into music? These were all questions that were investigated as I conducted this research project.

This study is interesting in what it reveals. The original image (above) is me playing the A chord every fourth beat. The graphic shows rhythm with the bold peaks, and sustain with the waves dissolving into the next peak. I asked people to play this with no understanding of how the translation was made. Some people followed the rhythm of the peaks, and were able to stay in time, but always with a different chord. Even if they were able to somehow guess that the graphic was an A chord, that's not the point of interest. I was interested to see if people could use this graphic to express themselves. The results were all over the place: solos with heavy distortion, gentle finger-picking, dissonant chord-strumming and something reminiscent of the 7th Heaven theme song. Each person had such a varied interpretation of the graphic that there was no way for me to group them. They were all so random. The graphic is visually complex and not legible to a person who is unfamiliar with the computer program.

Round 2

I had to create a video that directed the user better than the first attempt, in order to reduce the amount of randomness. I made two videos that were very clear-play the c chord every time you see a shape, and play the f chord when the cursor hits the line. These two videos were sent out to users of Amazon's Mechanical Turk, and I asked them to follow the directions, and send me an .mp3 of them playing the guitar.

These results were not illuminating in any way. We all know that everyone will play a C chord differently, the chord stays the same but there are so many factors (the type of microphone, the type of guitar, etc) that determine the way a recording sounds. I received 10 clips of a person playing the F chord along with a video, but so what? In contrast, the project "In B flat" by Darren Solomon shows the possibilities of using anonymous musicians to create a beautiful piece, and it is very successful because the parameters are just right. Solomon asked contributors "to sing or play an instrument, in Bb major. Simple, floating textures work best, with no tempo or groove. Leave lots of silence between phrases." The result is a mesmerizing collage of musical meandering in the key of B flat.



ANALYSIS

Can designers *really* use design methodologies to create music? Is the sound to image translation a valid means of creating design? Can any type of music be placed to a visual and seem like it fits?

Using design methodologies to create music seems to be the most fruitful endeavor of the studies I conducted. This is true because methodologies can always change and evolve. Ultimately, I would have a myriad of ways to get musicians to generate music. If my process continues to develop, each project would inform the next, as it did in this investigation.

I don't view all my projects as successes, but I feel that each project was a necessary part of the process. The Visual Show was a rewarding project that allowed me to take my work to a level I had not anticipated. The Sound to Image translations left me frustrated and annoyed, but without them, I would not have conducted the Visual Prompt.

As a body of work, Sound & Vision has cemented my interest as a designer. A designer is not limited to being an album cover maker. For someone who used to be called a graphic designer, media design has positioned me to have a more meaningful practice and to think about my career in a different light.

Discovery and Insights:

As the projects were completed, I began to notice similarities throughout. The third iteration of the Blind Marker project resulted in drawings that looked very similar to the Sound to Image translations. When the two sets of images are placed side by side, the formal qualities show translations by man and machine

might look the same, serendipitously. Another insight occurred during the Visual Prompt project. I purposely asked musicians with different backgrounds to interpret the same visual. I assumed the songs would all sound very different and unique to the genre of music in which they were made. However, the six songs all shared a similar sound. Nosaj Thing generally makes songs heavy in bass and complicated chord progressions; Buildings Breeding has a sound typical of California indie pop music. Ultimately the songs all shared a similar texture and moodiness. This can only be attributed to the process and directions given to them before they wrote their pieces.

Future Direction:

The future direction of this project will manifest itself in my practice; a small design studio in collaboration with Julia Tsao. Together, we work under the name **Fair Enough**. Our goal is to collaborate with musicians and artists to create research-based design projects. We will start this endeavor though working with musicians. We hope to expand into working with artists, galleries, fashion and more.

REFERENCES

Acknowledgements

Links

Thanks