FACE|IMAGE: A SERIES OF ELECTROACOUSTIC WORKS

by

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Face|Image is a series of four fixed-media electroacoustic music pieces, centered thematically on the relationship between humans and technology. I composed and arranged these pieces in the digital sound design program Kyma. This thesis also includes a brief history of electroacoustic music and details my musical influences and compositional methods for *Face|Image*. I also explain the thematic inspirations for my music, and analyze the ways I musically conveyed thematic concepts within the series.

Acknowledgements

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Table of Contents

List of Accompanying Materials

1. Digital download containing the four-part series *Face|Image*.

List of Figures

Introduction

Background

Music and Technology

   Music is historically tied to technology. Musical technologies like acoustic instruments and musical notation have changed over time, reflecting different movements in musical history. Over the last century and a half, the pursuit of music has fostered a boom in audio technologies. For centuries Western music relied on a system of coinciding notes and pitches, reflected in the style of notation used amongst common practice composers.[1] Music's physical form existed solely on the page, only fully realized by the performances of musicians. Breakthroughs during the 20th century brought new technologies, including microphones, magnetic tape, and sound synthesis techniques. From this point onward, music could exist in a physical form beyond a notational representation. Advancements in audio technologies during the 20th century coincided with a growing interest in pushing the limits of those technologies. The results were new types of music under the term *electroacoustic music* based on the manipulation of sound with electronic technology.[2]

   Sound provides a significant symbolic depth in comparison to notes in conventional music. Musical notes are abstract and only define specific pitches, whereas sounds are representations of specific objects, and can have very specific cultural meanings. For example, people living in the US associate the sound of an

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[1] Michael Clarke, "Analysing Electroacoustic Music: An Interactive Aural Approach," *Music Analysis* 31, no. 3 (2012): 347.

[2] Michael Hamman, "From Technical to Technological: The Imperative of Technology in Experimental Music Composition," *Perspectives of New Music* 40, no. 1 (Winter 2002): 103.

ambulance siren with emergency. However, depending on an individual's cultural experience, they may not have the same perceptions of certain sounds. The mental associations people have with sounds make them powerful musical tools. Due to the moods or styles people associate with different instruments, conventional music takes advantage of sound associations as well. However, because electroacoustic music is not limited to existing instrument sounds, composers can portray affective or cultural symbols in an unlimited number of ways.[3] On the contrary, sound can also be manipulated into unrecognizable new timbres, devoid of any association to listeners. Creating musical sounds by this method removes any connotations, allowing listeners to experience the music without any preconceived associations with the sounds.

Experimental Music

Experimental music is any music that pushes the boundaries of what is expected of and accepted as music. Rather than relying on existing styles, experimental music seeks out new ideas.[4] In her article "Computer Languages, Kyma, and the Future," Carla Scaletti describes the 'experimental musician' as "one who approaches each act of musical creation in a spirit of exploration and innovation, often with the goal of inventing new kinds of music that have never been heard before."[5] By embarking on this musical endeavor, I took on the role of an experimental musician. I had musical influences to draw from, but I also composed with no rules or preconceived notions of how my music was supposed to sound. Much of the time my compositional process

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[3] Tullis Rennie, "Socio-Sonic: An Ethnographic Methodology for Electroacoustic Composition," *Organised Sound* 19, no. 2 (2014): 123-124.

[4] Roger Smalley, "Experimental Music," *The Musical Times* 116, no. 1583 (January 1975): 23.

[5] Carla Scaletti, "Computer Music Languages, Kyma, and the Future," *Computer Music Journal* 26, no. 4 (Winter 2002): 69.

would begin by making an audio recording of a sound, an act that would guide the trajectory of the whole piece.

Electroacoustic Music

Electroacoustic music composition began during the early 20th century and has evolved over time in conjunction with the development of new sound recording and sound manipulation tools. The first iteration of electroacoustic music was developed in 1948 by Pierre Schaeffer, a French radio broadcasting engineer. He composed music by recording various sounds, like train whistles, bells, or piano chords, onto tape, varying the speeds of each recording, and arranging them together into pieces. Schaeffer dubbed his style '*musique concrète,*' becoming one of the first people to explore the capabilities of recorded sound.[6] Schaeffer used his pieces as studies in sound and technology, and through his experiments created philosophies that heavily influenced the future of electroacoustic music. He had a concept called "reduced listening," which Christopher Haworth describes in "Sound Synthesis Procedures as Texts" as:

> ...a procedure that seeks to cultivate a kind of radical 'presentness'
> wherein only the object of present perception is attended to, rather than
> its object-causes or semantic referents. What is left behind, following
> this intentional sensory bracketing, is what Schaeffer called the
> 'acousmatic': the content of my perception rather than its cause.[7]

The point of reduced listening is for the listener to experience the sounds of a piece completely separate from the objects of their creation. The listener then perceives music with no preconceived notions of how something *must* sound.

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[6] David Ernst, *Musique Concrète*, (Boston, MA: Crescendo Publishing Company, 1972), 10.
[7] Christopher Haworth, "Sound Synthesis Procedures as Texts: An Ontological Politics in Electroacoustic Music and Computer Music," *Computer Music Journal* 39, no. 1 (Spring 2015): 42.

Parallel to Schaeffer's experiments in recorded sound, a school formed in Cologne, Germany that focused on a new genre of experimental music called '*elektronische Musik*.' This style falls under the umbrella of electroacoustic music, but unlike *musique concrète*, composers do not use recorded sound samples to create music. *Elektronische Musik* composers only use sounds that are electronically synthesized in their compositions.[8] One of the most influential electroacoustic composers of the 20th century was Karlheinz Stockhausen. Stockhausen experimented with composing in both *elektronische Musik* and *musique concrète* styles. He also offered insightful observations of sound and wrote the influential paper "The Concept of Unity in Electronic Music" about the different attributes of sound and their relationships to one another.[9]

Musique concrète and *electronische Musik* are just two applications of electroacoustic compositional techniques, but together they provide the foundations that experimental electronic composers have branched from since the mid-20th century. With the advent of computer music during the last half of the 20th century, the techniques originally developed under *musique concrète* and *electronische Musik* were subsumed into an environment that offered more precise control and extensive sonic modification processes.

Personal Background

My interest in electroacoustic music stems from the courses I have taken within my major and my ongoing experimentation with audio recording and music production.

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[8] Peter Manning, *Electronic and Computer Music*, (Oxford: Oxford University Press, 2004), 42.
[9] Karlheinz Stockhausen and Elaine Barkin, "The Concept of Unity in Electronic Music," *Perspectives of New Music* 1, no. 1 (Autumn 1962): 39-48.

Before I began composing experimental electronic music, my musical background was mostly guitar-based, with focuses in classical, flamenco, jazz, rock, and metal styles. From listening to experimental composers, I developed an appreciation for the musicality of everyday sounds. As I encountered more experimental music throughout my college career, I began to question the notions I had of what makes a sound musical.

As I approached the final term of my 3rd year in college, I decided to compose a series of electroacoustic pieces for my thesis project. I initially thought of perhaps recording an album with my rock band or composing a set of jazz pieces. However, I ultimately decided to allow myself the freedom to work on something less musically restrained and more independent. Without any reliance on acoustic instruments or musicians, I had the freedom to explore my musical tastes and create something which I believe is unique. My decision to compose a series of electroacoustic music began a year long process of musical and technical experimentation. In order to compose this music, I began thinking of music as more than collections of notes, harmonies, and rhythms. I began composing music as an organization of sounds.

Although I chose to compose in a tradition concerned with pushing boundaries, I discovered through composing that there were certain limitations on what I could do with my music so that it would be compelling. For example, my music needed to have motifs or ideas that listeners could grasp as interesting and significant. I also needed to create some sort of evolution or progression in the music that led the listener through new ideas and conclusions. When structuring a piece, making certain that the parameters of different sounds supported each other was important. For example, if one sound has a distinct rhythm, it may be unpleasant to add another sound with a wildly

different rhythm and tempo at the same time. The elements of a piece of music must work together.

I arranged my music similarly to conventional acoustic instrumentation. Acoustic music ensembles are usually made up of multiple instruments that when combined fill out a wide pitch range. For example, a string quartet is made up of a cello, a viola, and two violins. The cello occupies the bass range, the viola the middle voice, and the violins the higher end of the pitch spectrum. When combined, these instruments produce a full sound with distinct timbres that do not fill the same frequency space. I arranged the sounds in my pieces with this concept in mind. Even if two sounds are unique and interesting, I found if they occupy the same frequency range at the same time the resulting music lacks clarity.

Purpose

My goal for this experimental music series, entitled *Face|Image*, was to create four unique electroacoustic pieces that have symbolic and musical significance. Specifically, "Being|Object," "Voice|Breath," "Memory|Dream," and "Reality|Perception" allowed me to experiment with compositional techniques while working within the sound design programming language Kyma. These pieces explore themes of humanity, technology, and perception.

Influences

When composing this series, the influences from which I drew were varied. Although I embraced the experimental ways of producing music pioneered by earlier electroacoustic composers like Schaeffer and Stockhausen, I also brought influences

from popular artists into my music. I was inspired to develop conceptual themes to structure my music around by progressive rock and metal bands like Pink Floyd and Periphery. Both of these groups influenced me through their methods of telling stories across whole albums both lyrically and musically. For example, Pink Floyd's rock opera *The Wall* makes use of a single four-note melodic theme that recurs in different ways throughout the album. The band uses compositional techniques like augmentation, diminution, and reharmonization to create a widely varied, but cohesive work of music based on the four-note theme.[10] This influence inspired me to interweave specific motifs and sounds throughout my series. My musical themes signify different abstract concepts, constructing a programmatic development throughout the series.

Hip-hop artists like Kendrick Lamar, A Tribe Called Quest, and DJ Shadow also informed my music. In general, hip-hop heavily uses sampling, with artists often combining different instrumental sections from older jazz, funk, and pop records to create new musical arrangements.[11] These three artists in particular influenced me in the ways that they blend audio samples into their music to deepen the thematic content. Lamar's album *Section.80* features audio recordings of phone conversations at the ends of each song to portray a narrative that deals with racism and drug abuse in African American neighborhoods during the 1980s.[12] The way this album made use of sampled dialogue inspired my own use of dialogue in my music.

DJ Shadow's debut album *Endtroducing.....* is a masterful work in DJ music. The album is built with samples taken from an immense collection of records and films.

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[10] Pink Floyd, *The Wall*, Columbia Records, 1979, LP.
[11] Sophy Smith, "The Process of 'Collective Creation' in the Composition of UK Hip-Hop Turntable Team Routines," *Organised Sound* 12, no. 1, (2007): 80.
[12] Kendrick Lamar, *Section.80*, Top Dawg Entertainment, 2011, Spotify.

The most influential part of this album for me is how DJ Shadow weaves different samples together to create cohesive musical ideas. For example, the first track on the album "Best Foot Forward" features a string of words taken from different audio samples which he uses to construct a spoken introduction for the album.[13] His technique inspired me to combine different sounds together into unique phrases and informed many of the transformative moments in sound across my series.

Film sound also had a huge influence on my compositions. David Lynch is one of my favorite filmmakers, and he regularly uses sound effects and textures to support the moods of his films. *Eraserhead* is a key example of Lynch's use of sound design. The film has relatively little dialogue, with most of the sound space occupied by loud hums and abrasive noises.[14] The resulting atmosphere of the film is unnerving and tense, making it difficult to even watch the whole film. The way Lynch uses sound textures to incite an affective response in his audience greatly influenced the ways I constructed sounds for my compositions. The mood of a sound or an arrangement was always at the back of my mind while I composed.

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[13] DJ Shadow, "Best Foot Forward," track 1 on *Endtroducing.....*, Mo' Wax Recordings, 1996, LP.
[14] *Eraserhead*, directed by David Lynch (1977; Los Angeles, CA: American Film Institute).

Methods

Overview of Methods

  To compose this series, I used Kyma to build sounds from various audio samples I either recorded or took from other audio sources, and arrange them together into pieces. The two primary audio tools I used to compose my pieces are the digital programs Kyma and Logic Pro X. The compositional and creation process consisted of four different subprocesses: recording, composition, arrangement, and mastering.

Kyma

  Kyma is a digital programming language meant for sound design. It functions as a computer application but has a much wider range of control than other applications. While other music and sound design applications have specified operations and boundaries, Kyma opens as a blank slate on which the user constructs sounds as individual programs.[15] Much like other programming languages, Kyma operates through the use of object-oriented programming. The user combines different Kyma Sound objects that generate or process sound in specific ways to create unique Kyma Sounds. Kyma Sounds are essentially the 'instruments' I created to compose and arrange my musical pieces. Kyma Sounds start with a generator (i.e. a sample, oscillator, etc.), which is strung to various processors. These processors include filters, reverbs, and other objects that alter the sound based on data input by the user. The program visualizes Kyma Sounds as a web of connected Kyma Sound objects. Each Kyma Sound object has various parameters that the user can control. The settings of

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[15] Jeffrey Stolet, *Kyma and the SumOfSines Disco Club*, (Jeffrey Stolet, 2011), 8.

these controls are often dictated by numerical values, but they can also be live-controlled or automated using Kyma's control language Capytalk. *Figure 1* shows an example of a complex Kyma sound.
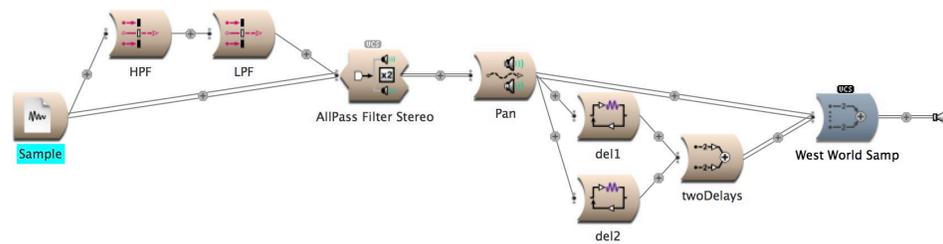

Figure 1: Visualization of a Kyma Sound.

This is a visual representation of a Kyma Sound from the piece "Memory|Dream." Each box represents a different Kyma Sound object.

The user can control a Kyma Sound in real time using Kyma's Virtual Control Surface (VCS). *Figure 2* shows a view of the VCS window. The arrows positioned on each fader show what value is being fed into each parameter.
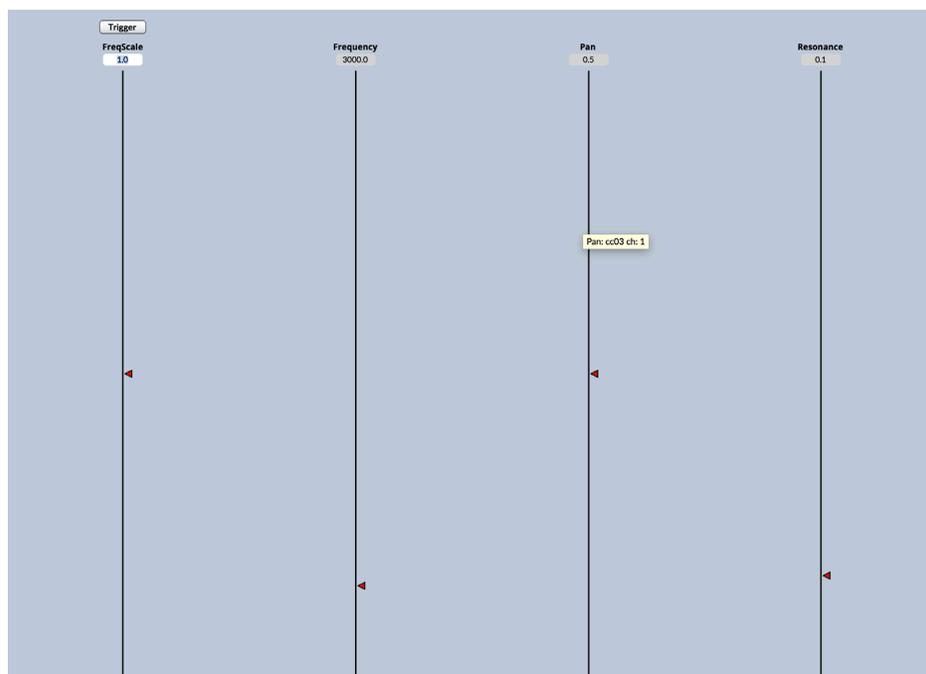
Figure 2: Kyma's Virtual Control Surface window.

The user can live-control parameters of a Kyma Sound in this window, as described above.

Kyma also has a separate window for arranging multiple Kyma Sounds into a musical piece called the Timeline. The Kyma Timeline allows the user to record a performance of a Kyma Sound by saving real-time parameter changes as data that the program automates on playback. The user can also write in automation data in the Parameter Control pane in the Timeline window. *Figure 3* shows the Kyma Timeline.
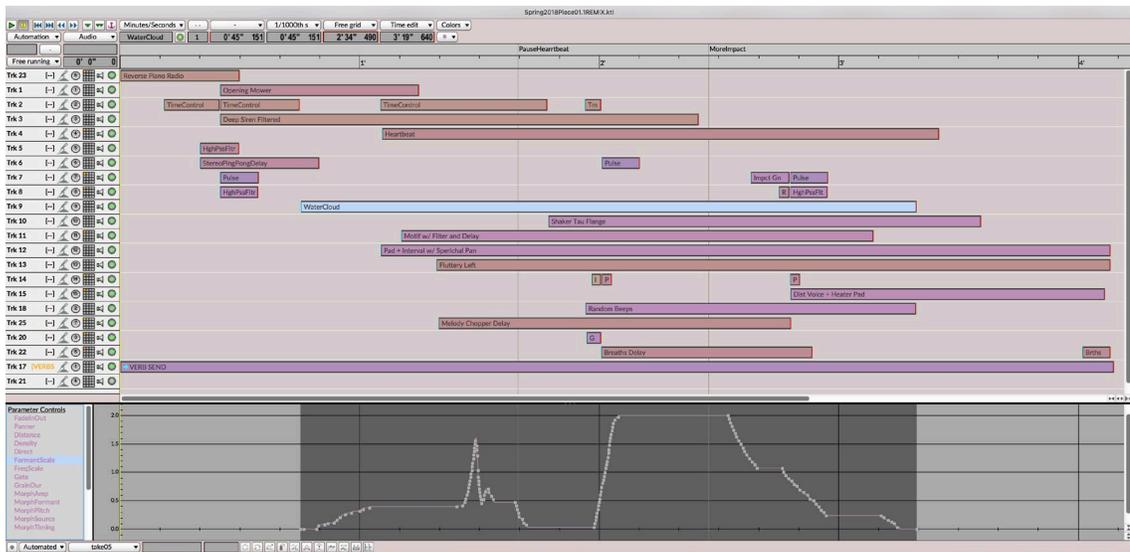
Figure 3: Kyma's Timeline window.

This image shows the Timeline for the piece "Being|Object." The horizontal bars of various lengths in the upper half of the image are Kyma Sounds. The bottom half of the window shows the Parameter Control pane with automation data written into it.

Recording

The methods I used in the recording process for this series were quite varied. Often times I would begin composing pieces based off of field recordings I had taken. For example, in several instances I would walk around the house, microphone in hand, recording samples of sinks, fans, and tools from around the kitchen. Other times I would encounter sounds out in the world. For example, I captured one sample from shutting a door to a stairwell in Prince Lucien Campbell hall. The initial boom of the door reverberated through the hallway, sounding with the decay of a distant explosion.

Other times I would collect more conventional musical samples from acoustic or electronic instruments. As a guitar player, I often found myself recording short motivic ideas or sound effects on the instrument to use in my compositions. I also recorded

voice-over performances of short phrases or full texts, and multiple acoustic drum set performances.

Due to their influence on the themes in my music, I also occasionally borrowed samples from films. These samples were most often dialogue that I thought would thematically enhance a piece, or that I could transform into a unique sound.

Many of my pieces began with a small collection of sounds and a rough idea of how I would want to manipulate them and arrange them together. As I constructed pieces, I found that I would use the same sound samples to build multiple Kyma Sounds.

Composition

My compositional process for each piece began by taking an audio sample and building it into a Kyma Sound with various processors. For example, "Object|Being" began with a Kyma Sound that I built based on a sample I recorded of water rushing out of the sink in my bathroom. I time-stretched the audio recording of the sound and layered it in different iterations that were tuned slightly differently from one another.

I then experimented with automating the parameters of Kyma Sounds to create a musical progression. I mainly did this using an AKAI MIDI controller routed to send data to Kyma's Virtual Control Surface through the program Max. The AKAI has eight different faders along the bottom of it that send out MIDI data to a computer. I assigned each fader to control a different parameter of the Kyma Sound. Then I ran through the piece multiple times, experimenting with different performances until I found one that I was happy with. Think of this like musicians recording different takes of a piece while in a recording studio.

Arrangement

One unique thing about electronic music, as opposed to notated music, is that the arrangement process and the realization of the music are the same. Since the sounds have already been captured, there is no need to realize the music later, say by performing musicians. Because I dealt with recorded sounds in the arrangement process, I found myself mixing my pieces as I arranged them. According to Curtis Roads in his book *The Computer Music Tutorial*, sound mixing is "the process of balancing the levels of several audio channels."[16] A mixing engineer will also use tools like equalization to confine instruments into respective pitch ranges to preserve clarity and sonic balance. High quality mixes depend on well-arranged and recorded instrument performances. If multiple instruments in a piece occupy the same pitch range, the piece will lack clarity in both performance and on recording.

Today many audio engineers mix music in a type of computer program called a digital audio workstation (DAW). DAWs allow the user to construct an arrangement of audio recordings on different channels to be mixed using volume faders, panning faders, and processors like equalizers and compressors. In many DAWs users can easily add or remove processing to individual channels, allowing for efficient mixing workflow. However, in Kyma, processing has to be added within each Kyma Sound. As I arranged sounds together, I would equalize each one so that they would cohesively work together in the final arrangement.

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[16] Roads, *The Computer Music Tutorial* (Cambridge, MA: The MIT Press, 1996), 349.

Mastering

Mastering is the last step of audio processing. It is a fairly technical process where one processes a collection of audio recordings to unify them.[17] I composed each piece for this series in different Kyma Timelines using many Kyma Sounds made from different samples. Each audio sample I recorded had different sonic characteristics based on the source and microphone used to record it. Because of these differences, the resulting mixes of each piece had different sonic characteristics. Some of the pieces came out sounding quite dark, while others were brighter. Each piece also occupied a different range of loudness based on the monitoring level I used while composing, which caused noticeable differences in average volume when listening to the entire series.

My goal in mastering was to cohesively unify the series as a whole. I did this by applying equalization curves to each piece in order to create a consistent sonic makeup. I also automated the volume throughout each piece to create a uniform level for the listener. Finally, I added a small amount of audio compression to each piece, so that I could increase the overall volume without digitally distorting the audio in any way.

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[17] Mark Cousins and Russ Hepworth-Sawyer, *Practical Mastering: A Guide to Mastering in the Modern Studio*, (Burlington, MA: Focal Press, 2013), 1.

Series Notes

Face|Image Series: Overview

Face|Image is driven by thematic concepts that I was interested in during the compositional process. I introduce those themes in this section, as well as explain how I portrayed certain concepts musically through different samples, sounds, motifs, and musical themes. In this section I also discuss my inspirations for each piece. Because most of my music cannot easily be referenced with conventional musical notation tools, like notes and measure numbers, I will describe sounds and motifs verbally and include time markers for reference.

Thematic Content

The central theme of *Face|Image* deals with the relationship culture has with technology, and the different ways it affects people's views of one another. The title of the series was inspired by the Internet and social media. While considering potential themes for this series, I thought about my everyday experiences and how they affect my worldview. Similar to many people my age, I am perpetually attached to my smartphone. Every day I find myself bombarded with hundreds of images of faces on Facebook and Instagram. While some of these images included text captions for context, I might never know the real experiences behind any of them. The story portrayed by an image may be completely different than the truth behind its capture. My music functions in much the same way, where sounds are not necessarily representative of the objects of their creation. Some of the sounds in my pieces aurally indicate

recognizable things, yet even in those instances the initial audio sample that I constructed the Kyma Sound with may have been unrelated.

The science fiction concept of 'the android' also influenced the themes behind *Face|Image*. Essentially, an android is the combination of humanity and technology in one being. I drew thematic influence from science fiction films that featured androids, including *Blade Runner*, *Westworld*, and *Ghost in the Shell*.[18][19][20] I was fascinated by the way androids put pressure on humanity's reliance on technology, while also symbolizing a marginalized 'other' juxtaposed against the human 'self.' The 'self/other' dichotomy, as well as the dichotomy between an object and its representation, inspired the series and piece titles.

Musical Themes

The concept of duality appears in my pieces through formal and aesthetic contrasts within the pieces. Each piece has a similar form of two major sections. The different sections are distinct in the Kyma Sounds used in their arrangements, as well as their moods.

Many of the Kyma Sounds I created appear throughout the entire series. Some of these are specific audio samples, like breath sounds. Others are more complex sounds I used to create certain moods in my pieces.

There is also a musical theme present throughout the series built on a descending melodic line meant to symbolize duality. The theme functions in a Phrygian mode, beginning on the flat 6th scale degree and moving to the 5th scale degree, then

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[18] *Bladerunner*, directed by Ridley Scott (1982; Burbank, CA: Warner Bros.).
[19] *Westworld*, directed by Michael Crichton (1973; Beverly Hills, CA: Metro-Goldwyn-Mayer).
[20] *Ghost in the Shell*, directed by Mamoru Oshii (1995; Tokyo: Production I.G).

going from the flat 2nd to the root. The result is a parallel line constructed from two minor second intervals separated by a fifth. The line is dark and foreboding sounding, yet balanced. I will refer to this motif as the 'descending Phrygian theme' elsewhere in this thesis. *Figure 4* shows this theme in notation.
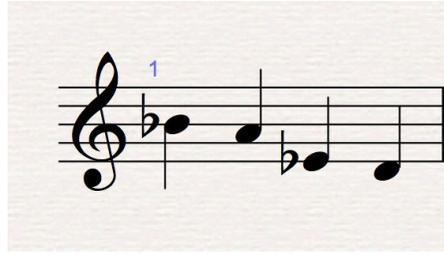
Figure 4: The descending Phrygian theme.

I. Being|Object

"Being|Object" is a piece that deals with the contrast between people and the technologies we rely on to be connected to one another. While composing this piece, I also thought about the way images capture people in the form of an object. Many of the sounds were recorded from different objects within my house and the ambience from a warm spring day in Eugene, Oregon.

"Being|Object" introduces the themes present in the series as well as sets the overall tone of the series moving forward. The piece is made up of contrasts between abrasive, tense moments, and more ambient moments of stasis. My goal for this piece was to create something which blends recognizable motifs related to the human body, while contrasting it with textures that sound more alien or mechanistic. The two main motifs in this piece are a recurring sample of a breath and the underlying heartbeat that drives the piece forward. The heartbeat sound first enters the piece at 1:35, while the breath enters at 2:48. I chose these sounds because they represent shared experiences all

humans have inherently. All the other sounds in the piece are heavily manipulated to sound more surreal, in contrast to the more recognizable sounds.

"Being|Object" also features the first iteration of the descending Phrygian theme. It appears as part of a larger phrase shown in *Figure 5*.

Figure 5: The melodic music phrase in "Being|Object."

The descending Phrygian theme appears in the last two bars of this phrase.

After the powerful opening of the piece, the music settles into a more relaxed and ambient texture. The theme quietly enters as the piece builds towards its first major point of tension (1:44). Initially the notes of the theme are quite short and percussive, but as the theme repeats the notes slowly become longer and more distinguishable (2:16). After the first breath dissipates across the recording, the theme starts to rise in pitch and volume, becoming more tense and distorted as the piece progresses (2:50). The theme creates a sense of foreboding in the piece, despite its more conventional use of rhythm and pitch. The sound of the theme as it appears in this piece resembles Industrial Rock, a genre that purposefully evokes a mechanistic sound.[21] This theme symbolizes the connection between the two opposing forces present in the piece. Just

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[21] S. Alexander Reed, *Assimilate: A Critical History of Industrial Music* (Oxford: Oxford University Press, 2013), 17.

like the fictional concept of the android, this musical theme represents the unification of humans and technology.

II. Voice|Breath

"Voice|Breath" was the first piece I composed for this series, and as such I created many of the sounds that populate my entire work for this piece. Some of these include the deep, explosion-like pulses that crescendo and decrescendo throughout different points of tension in the series, or the randomized notes found near the end of the piece that are reminiscent of sound effects from a science fiction film. With this piece I wanted to compose powerful sounding music with a constant feeling of motion. The title relates to motifs found throughout the series. Breath samples appear in multiple pieces, creating a human connection within the music. In this piece I used the sound of a human voice to represent the depth of individual personalities.

The piece is structured as a series of waves that culminate in powerful moments of tension and release. This piece carries the same thematic elements as "Being|Object," but features a differently developed palette of sounds. Much of the piece is built from pads that slowly change pitch and volume as the piece progresses. The most important moment of the piece happens near the middle, with the introduction of a pitched tone slowly rising as the piece crescendos (1:47). The tone has a similar timbre to the human voice letting out a distant yell, signifying a moment of humanity in a piece of otherwise unnatural sounds. Directly after this moment, as the piece settles into its ending section, the science fiction-esque sound mentioned in the previous paragraph appears. Much like the contrast in "Being|Object," this motif symbolizes the divide between humans and

technology. While the humanistic sounds in "Being|Object" are related more to human bodily functions, the voice in "Voice|Breath" represents personhood.

III. Memory|Dream

"Memory|Dream" expands on the contrast between humanity and technology introduced in the prior two pieces. The piece is built around an arrangement I made for five guitar parts. I recorded the arrangement in Logic Pro X and brought the recordings into Kyma, around which I constructed the rest of the piece. I also used different audio samples from films throughout this piece. Many of them were the science fiction films I mentioned in the "Themes" section. With this piece I principally explored the concept of the android through music. The music itself is augmented with dialogue from the film samples. The title was inspired by the concept of 'dream memories,' and how they compare to memories of reality.

The first sample in the piece appears in the opening section. The sample is taken from a scene in the 1982 film *Bladerunner*. In this scene, Rick Deckard (Harrison Ford) converses with Eldon Tyrell (Joe Turkell), the CEO of the Tyrell Corporation, a company which builds and distributes androids called replicants for labor. The focus of their discussion is on the way Tyrell's corporation uploads backstories into the androids it manufactures as a way to give them a personal reality and make them more human-like.[22] Deckard finds the method morally questionable. If one's personality can be constructed from generated memories, then how can Deckard be certain his own experiences are part of reality? The concept of generated memories reminded me of the real-world experience of having dream memories. While dream memories do not

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[22] *Bladerunner*, 22:08.

represent real events, they feel like personal experiences. I chose to include this audio sample in "Memory|Dream" because of the way it connects the overarching symbol of the android to the themes of memories and dreams in the piece.

I captured the concept of false memories thematically in this piece through the frequent use of reversed sounds. Examples of this are the reversed breath near the beginning of the piece (0:10), the reversed guitar plucks at (1:38) and the reversed vocal texture at (2:50). While these sounds recognizably represent their sources, hearing them in reverse distorts the sounds into unnatural representations of themselves. The impossibility of hearing sounds this way without a sound manipulation program or audio tape loop symbolizes both the falsehood of the memories given to Tyrell's androids, and the falsehood of dream memories.

The second audio sample in this piece is from the climactic scene of *Blade Runner*. Deckard is cornered by a rogue replicant who he has been hunting down. Instead of killing Deckard, the replicant spares him and explains his plight. Replicants only live for a short number of years before shutting down. Despite being a machine, he has gathered memories and developed a personality of his own. He identifies his personhood with these memories, revealing his frustration of their erasure at his death.[23] I placed this sample into the arrangement at 3:08, during the penultimate build in the piece. While composing this piece I thought of the way humanity has a shared memory, through things like publications, artwork, and even social media. Although each person will have their own memories, they will also add to humanity's shared history.

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[23] *Bladerunner*, 1:46:23.

"Memory|Dream" differs musically from the other pieces in a major way. Most of the piece features recorded acoustic instruments playing music that relies on specific rhythms and melodic ideas. Because of this, the entire piece is fixed to a regular beat. The last section of the piece also breaks into a heavier rock-oriented style of music (3:53). The section is built on an arrangement of drums, bass, and guitar playing two different melodic phrases. The second of these phrases is built on a variation of the descending Phrygian theme as a way to connect this piece to the others musically (5:03). I chose to compose this section in a heavier style of music to create a dramatic contrast to the rest of the series. I am also a huge fan of heavier rock and metal music, making this section a representation of my own musical personality.

IV. Reality|Perception

"*Reality|Perception*" is a musical setting of the spoken word piece "The Moon's Been Gone for Hours" by Mikee Goodman, a British poet and lyricist in the band SikTh.[24] The subject matter of the text focuses on differences in perceptions and realities that people experience – hence the title. When I first heard Goodman's recording of the piece I felt that the text would fit well with the themes I wanted to explore in my series. The full text of the piece is:

> Surrounded by hands and faces
> I'm clutching my baggage and ringing my bell of help
> I don't think it will be heard
> There are too many shuffling feet and shivering teeth
> The moon's been gone for hours now
> And her makeup needs reapplying
> I wonder who she's with, or if she needs my help
> Many a man surround her pockets

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[24] SikTh, "The Moon's Been Gone for Hours," track 8 on *The Future in Whose Eyes?*, Peaceville Records, 2017.

They only covet what is in her pockets
I clutch my luggage and stare fiercely into the wall
We are waiting for transportation, me and my luggage
A moving mouth has made contact
And the dust, it looks friendly now
All the dollars I pay to one phone owning hand
Are well earned
It only makes me wonder where they go
Or what they do
And what lays beneath the dust
Under the eye of untrust
The badged and uniform wearing authoritarians
They are graced with notes from all sides of the world
And they seem to be in charge
But then I wouldn't know
The madness in this city glows
And my comfort in this chaos grows!
For we are taken care of well
And driven to and from our luxury shell
Machine gun man stands by the door, to protect us
I like it here, think I'll come back for more[25]

"Reality|Perception" features a multitude of different sounds arranged to create an overall affective texture that supports the text of the poem. I used different synthesized tones at low pitches to provide an uneasy and heavy feeling to the entire piece. The principal focus of the song is on my performance of the spoken word piece. I processed my voice using a vocoder combined with the original recorded signal to give my voice a more robotic timbre. As the piece progresses I also changed the pitch and timbre of the voice to become higher or lower sounding to stress thematic changes. An example of this can be heard at 2:36. As I speak the line "The moon's been gone for hours now," the voice shifts downward in pitch, creating a sinking effect to symbolize the moon setting.

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[25] "SikTh Lyrics – 'The Future in Whose Eyes?,'" darklyrics.com,
http://www.darklyrics.com/lyrics/sikth/thefutureinwhoseeyes.html#8.

The piece is structured in two sections that differ in tone. The first section features the first half of the text set against the uneasy texture I described above. After the line "They only covet what is in her pockets" the piece builds into a section of rising tension characterized by mounting feedback loops and distorting noises (3:21). The piece comes to an abrupt stop before entering into the second major section. The stop deliberately prolongs any sense of resolution after the tense build. After a moment of silence, the piece regains its momentum and enters a more ambient and calm section (4:18). The mood of the first section represents the anxious sounding perceptions of the voice in the text as they observe the world around them. Near the piece's end, the text shifts from a sense of anxiety to an acceptance of the main character's position in society. I reflected this in the last section of the piece by creating a more satisfying musical texture. As the piece nears its end, a looping hip-hop inspired phrase enters. The phrase is constructed by a drum beat with a bass instrumental voice laid over the top. The melody played by the instrumental voice is the last iteration of the descending Phrygian theme in the series. I used this phrase here to tie together the two themes in this piece's title, and to relate the piece musically to the others in the series.

Conclusion

Composing *Face|Image* was a process that ultimately helped me grow as a musical composer while exploring new avenues of music. Working on this series was my first experience at making a conceptual piece of electroacoustic music built from different recurring thematic ideas. I also learned a lot about working with digital audio in the process, as I ran into different challanges arranging and mixing my music. Knowing when a piece of music is "done" is always a difficult thing. However, I feel I have created a complete sounding series of pieces, and I am happy to present them. This series is a unique, sophisticated musical work that represents the current point in my musical career. I am proud of what I have accomplished, and excited to share my music with the world.

Discography

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