

Motion Picture Sound Design:
Sonic Motifs, Soundscapes, and Synchresis

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ABSTRACT

**Motion Picture Sound Design:
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by
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Motion Picture Sound Design is an art unto itself. Sound design is the glue that holds a film together, often creating illusions between the sound and image. The relationship between sight and sound is a solid bond forged deep in the subconscious allowing our conscious mind to discern the two as a greater whole. The two elements often influence one another creating deeper levels of meaning. The filmic realities that are created are designed to either portray an idea or to confuse the spectator.

With these principles in mind, the author of this master thesis explores the use of sonic motifs, soundscapes, and the effects of synchrony as they relate to motion picture sound design. The paper defines certain vocabulary associated with sound design, and explores the implications of these terms in the context of feature films. The films explored include *The Thing* (1984), *Frank Miller's Sin City* (2005), *The Thin Red Line* (1998), and *Wall•E* (2008). The author discusses his own work on the films *Taffy*, *Cigarettes* (2009), and *Grace* (2009), and discovers how to add sonic value to scenes using sonic motifs as metaphors and transitional elements, and using contrasting soundscapes to differentiate realities. Additionally, the author manipulates synchrony to add sonic details, and create doorways into the minds of characters in the films he sound designed.

Acknowledgments

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1. Kraus, Robert. *Leo the Late Bloomer*. New York: Windmill Books, 1971. A children’s book I grew up with, and loved dearly.

running and available for use. You always came to the rescue when problems arose, especially when I had forgotten about that “one switch” I had overlooked that magically made everything work.

Thank you to the two film directors I had the pleasure of working closely with on the two films discussed in this thesis. Marty Stano, writer and director of *Taffy*, *Cigarettes*, and I spent many hours in the studio mulling over every sonic detail as though it would make or break the film. This sort of collaboration was an amazing experience. Natalie Williams, writer and director of *Grace*, provided me with an opportunity that I never pass up: to work on “over-the-top” sound design. Both films were excellently produced, acted, directed, and filmed. I was humbled to have the opportunity to work on these projects. I would also like to thank Michael Coffman for working with me on *Grace*. His sound effects editing and Foley work saved me from having to pull several all-nighters during an already unbelievably busy time, as I stared down the barrel of a very short deadline.

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Table of Contents

Abstract	i
Acknowledgments.....	ii
Table of Contents.....	iv
DVD Contents.....	v
Introduction.....	1
Chapter	
I. Sonic Motifs, Soundscapes, and Synchresis.....	2
1.1 Sonic Motifs.....	2
1.2 Soundscapes.....	4
1.3 Synchresis.....	6
II. Sound Design Observations.....	8
2.1 <i>The Thing</i>	9
2.2 <i>Sin City</i>	11
2.3 <i>The Thin Red Line</i>	12
2.4 <i>Wall•E</i>	14
III. <i>Taffy, Cigarettes</i>	17
IV. <i>Grace</i>	27
Conclusion.....	34
Works Cited.....	36
Films Referenced.....	37

DVD Contents

Films

Grace (2009)

Taffy, Cigarettes (2009)

Audio Clips

AC3.1 - River_Churnet_Water_1998.wav
AC3.2 - RIVER_RAVINE_DP.ST.wav
AC3.3 - Wheel_of_Destiny.wav
AC3.4 - Mystery_Files_Uncensored.aif
AC3.5 - Baseball_Radio_Broadcast.wav
AC4.1 - Wind_High_Velocity_SHORT.wav
AC4.2 - Wind_Heavy_Cold_Gusts_SHORT.aif
AC4.3 - Airport_Parking_Garage_SHORT.wav
AC4.4 - Birds_Canada_Goose_SHORT.aif
AC4.5 - Snow_Blower_SHORT.aif
AC4.6 - Grace_Airplane_01.aif
AC4.7 - Grace_Airplane_02.aif
AC4.8 - Grace_Airplane_03.aif

Video Clips

VC3.1 - Taffy_ConvenienceStore_01.mov
VC3.2 - Taffy_ConvenienceStore_02.mov
VC3.3 - TaffyExperiment_00.mov
VC3.4 - TaffyExperiment_01.mov
VC3.5 - TaffyExperiment_02.mov
VC3.6 - TaffyExperiment_03.mov
VC4.7 - Grace_Knuckles.mov

Introduction

Sound design is growing in importance throughout the worlds of film, television, and video games. Great sound designers, like Ben Burtt and Walter Murch, alongside theorists on the subject of the relationship between sight and sound, like Michel Chion, have laid a foundation for current and future sound designers and theorists to expand upon and experiment with.

Three of the tools used by sound designers are sonic motifs, soundscapes, and knowledge of synchresis – “The Three S’s.” While there are more than three tools that a sound designer might utilize, the purpose of this document is to explore and understand “The Three S’s,” and how they relate to the production of a film’s soundtrack. Elements of “The Three S’s” are seen in a number of films, including John Carpenter’s *The Thing* (1982), Robert Rodriguez and Frank Miller’s *Sin City* (2005), Terrence Malick’s *The Thin Red Line* (1998), and Andrew Stanton’s *Wall•E* (2008).

“The Three S’s” have been used to create a deeper emotional understanding between the audience and the characters in the films *Taffy*, *Cigarettes*, and *Grace* (both 2009). Sonic motifs have been used in these two films as metaphors, transitional elements, and as a means to heighten tension. Various soundscapes have been used in *Taffy*, *Cigarettes*, and *Grace* to contrast realities and heighten the emotional bond between characters. Moments of synchresis were exploited in these two films to draw the audience into the mind of certain characters, and add sonic details to the soundtrack. Audio and video examples drawn from *Taffy*, *Cigarettes*, and *Grace* are presented for reference on the accompanying DVD.

Chapter 1

Sonic Motifs, Soundscapes, and Synchresis

The goal of this chapter is to explain the title of my thesis, and help the reader understand why I thought sonic motifs, soundscapes, and synchresis were of great importance to my understanding of the art of sound design. Each of “The Three S’s” provides different levels of importance to a film’s soundtrack. While all three may not be used at a given moment, each of “The Three S’s” is important on its own.

1.1 Sonic Motifs

A sonic motif is a recurring sound often used in association with a person or idea. The musical equivalent is the leitmotif, which Richard Wagner (1813-1883) used in his operas. A leitmotif is a motif or theme associated throughout a music drama with a particular person, situation, or idea.² Sonic motifs have been used throughout many films to contribute to a character’s defining sounds, attribute emotion to objects, and help the audience understand the inner-workings of a character’s mind.

Robert Rodriguez’s *Desperado* uses a sonic motif that is specific to his main character, and defines that character in a sonic manner. The main character, El Mariachi, played by Antonio Banderas, has a spur on his right boot, which makes a ‘*ca-chink*’ sound, which sounds more like a cluster of small bells. Every time he plants his right foot as he walks or puts out a cigarette on the ground, we hear this ‘*ca-chink*’ sound. This use of a sound effect to define a character is also seen in George Lucas’ *Star Wars* and John Carpenter’s *Halloween*. The characters from these films, Darth Vader and

² Dictionary.com Unabridged. <http://dictionary.reference.com/browse/leitmotif> Based on the Random House Dictionary, © Random House, Inc. 2009 - accessed May 2009.

Michael Myers, respectively, are both defined by a heavy breathing sound. In these instances the sound helps to create tension, and enhance the creepiness of the character.

Another use of sonic motifs is Walter Murch's use of train sounds in *The Godfather* (1972), *American Graffiti* (1973), and *The Conversation* (1974). Murch talks about his love for the sound of a train because "if you think of it as a musical instrument, it's a very complex, interesting sound" (qtd. in Jarrett 6). He goes on to talk about using the sound in *The Godfather* to drive emotion in a scene devoid of music, where music usually serves the purpose of communicating emotions to the viewer. He explains that while the source of the sound isn't seen, and the audience might not know what is making it, one can understand what the sound is there for: to help the audience into the mind of the character (Jarrett 8).

Before reading this interview with Walter Murch, I too had already used both diegetic and non-diegetic train sounds as a sonic motif in my work on *Taffy, Cigarettes*. *Diegetic* sounds are sounds that are portrayed or suggested visually on the screen. The term comes from the word *diegesis*, which refers to the film world where the characters and story exist (Sonnenschein 152). *Non-diegetic* sounds are sounds that occur outside the world of the film, and are not perceived by the characters. The train sound was used in a variety of manners, including as a metaphor for the struggle of power. All of the uses of train sounds in *Taffy, Cigarettes* were acousmatic, which means the source of the sound is never seen (Chion, 221). *Taffy, Cigarettes* will be discussed in greater detail in chapter 3.

Karen Collins, a writer of such topics as film and videogame sound, discusses the use of leitmotifs and sonic motifs in James Cameron's *Terminator* films (Hayward 165-

175). Gary Rydstrom acted as a sound designer on the first two *Terminator* films. Collins talks not only about the recurring phrase from these films, “I’ll be back”, uttered by Arnold Schwarzenegger, but also about the use of a “foghorn-like groaning sound.” The sound is heard in the first *Terminator* film throughout the future sequences, and again in the sequel as part of the T-1000’s operating sounds. Murch and Rydstrom use sonic motifs over the course of two or more separate films - three in the case of Murch. My work will be exploring their use more regularly throughout a short film.

1.2 Soundscapes

The word ‘soundscape’ was derived from landscape. Soundscape is the acoustic manifestation of ‘place’ where the sounds give the inhabitants ‘a sense of place’ and the place’s acoustic quality is shaped by the inhabitants activities and behaviour.

-- Hildegard Westerkamp (Westerkamp 48)

Canadian composer R. Murray Schafer coined the term ‘soundscape’ to refer to an acoustic environment (Sonnenschein 182). Westerkamp’s definition above is right on point as it assigns partial ownership of a soundscape to the inhabitants and their “behaviours.” Her chapter in *Dhavani: Nature and Culture of Sound* mentions that an area’s soundscape offers a great deal of information about the culture of the people who inhabit the space (Malick 45-51). She states, “If we understand the behaviour of sound we can hear how a society behaves towards its environment (Westerkamp 45).”

Soundscapes can be comprised of static, ambient sound such as continuous bird chirping, traffic sounds, frogs and crickets, wind, rustling of trees and leaves, rivers, and the lapping of waves on a beach. Ambient sounds can also include electrical hums, buzzing lights, and noise from appliances. In addition to ambient sounds, soundscapes are comprised of what Michel Chion refers to as *elements of the auditory setting*, which are “sounds with a more or less punctual source, which appear more or less intermittently and which help to create and define a film’s space by means of specific, distinct small touches” (Chion 55). Elements of the auditory setting might include individual distant train and car horns, occasional construction sounds, sporadic bird chirping, and the sudden sonic appearance of an airplane.

Ambiences are sometimes created based on what the audience might expect, and not as a literal translation of a scene. Frank Serafine, creator of some of the sound effects in *The Hunt for Red October* (1990), notes that “fantasy plays a part in all aspects of moviemaking, and sound is no exception to the rule” (Serafine, 51). The example he gives is an underwater ambience. An underwater ambience recording sounds like telephone static, and doesn’t present the audience with the necessary tension and excitement that a movie like *The Hunt for Red October* needs. In cases such as the underwater ambience, the sound designer must add sound effects and ambiances together to create what he or she thinks the audience would expect or believe. In the case of *The Hunt for Red October*, the underwater ambience was comprised of underwater recordings of distant tankers, and bubbles and water pumped into a pool from a garden hose.

1.3 Synchresis

Synchresis is a term coined by audio-visual theorist, Michel Chion. He created the word by combining synchronism and synthesis (Chion 63). Synchresis is a psychological phenomenon that occurs when someone sees something and hears a sound at the exact same moment, resulting in the brain associating one with the other. Synchresis is the forging of sight with sound. Our brains have been wired to associate what we hear with what we see throughout evolution. It has only been recently that mankind has had the ability to manipulate sound and sync it with a moving picture, creating illusions as to what something sounds like.

Before the creation of films with sound, known early on as *talkies*, an example of the use of synchresis is seen in the art of ventriloquism. A ventriloquist paints the illusion that a non-living object, most often a puppet of some sort, is talking or making noises, while the ventriloquist is the one actually producing the sounds and causing the object to move. The illusion is forged in the spectator's mind because of synchresis. We are biologically wired to associate certain movements with certain sounds, such as a mouth moving producing vocal noises. For a ventriloquist to be effective, one must limit the movement of their lips and mouth enough to give the illusion that they are not creating any vocal sounds. Add to this a puppet that moves enough to distract most people away from any small amount of mouth movement, and the illusion is set.

Synchresis occurs regularly in the film world. Most notably it is relied upon in the science fiction and hyper-real action genres. Science fiction films usually sweep the audience away to a futuristic or distant land, and present new species and objects, all of which make sound. No one can really say what kind of sounds a species like Wookie or

Ewok would produce in a galaxy far away, or what a laser-blaster or light-saber would sound like, because they don't exist. Sound designers like Ben Burtt, who's work includes both the *Star Wars* and *Indiana Jones* franchises,³ have to fill in those gaps by creating new sounds using the technology they have available. Once these sounds are created, and lined up with the actions of a film, it is up to the human brain to interpret them as authentic and plausible.

³ *Star Wars: Episode IV – A New Hope* (1977), *Star Wars: Episode V – The Empire Strikes Back* (1980), *Star Wars: Episode VI – Return of the Jedi* (1983), *Star Wars: Episode I – The Phantom Menace* (1999), *Star Wars: Episode II – Attack of the Clones* (2002), *Star Wars: Episode III – Revenge of the Sith* (2005), *Indiana Jones and the Raiders of the Lost Ark* (1981), *Indiana Jones and the Temple of Doom* (1984), *Indiana Jones and the Last Crusade* (1989), *Indiana Jones and the Kingdom of the Crystal Skull* (2008).

Chapter 2

Sound Design Observations

Sound design is best understood through both research and application of techniques. While part of the research comes in literary form, a great deal of research can be done through observing films themselves. There are several methods that can be used for observing the sound design in a film. The first method of observation is to approach a film from an impressionistic standpoint by watching the film from beginning to end without interruptions, to get a general sense of the impact of the overall sound design. The second method of observation is to take specific notes about different aspects of the use of sounds, mixing, and panning.

This section of my thesis will highlight specific elements of the soundtracks of the more noteworthy films I have encountered. I will compare and contrast various elements of not only sound design, but also dialogue editing techniques, use of sound effects and Foley, use of automatic dialogue replacement (ADR), and elements of the overall soundtrack. Foley, named after sound effects pioneer Jack Foley, is the art of performing sound effects in real-time with a film (Viers 114). It should be noted that the term “soundtrack” is often used to refer to a compilation of music derived from a film. Throughout this paper I will be using the term “soundtrack” to refer to all of the sound elements that accompany the film.

2.1 The Thing

John Carpenter's *The Thing* (1982), a remake of *The Thing from Another World* (1951),⁴ was the first film I researched after turning my attention to sound design. The film's supervising sound editor was David Lewis Yewdall, who shares stories about the audio production of this film in his book, *Practical Art of Motion Picture Sound, third edition*.

The film is about an American research team in Antarctica that stumbles onto another research team's alien spacecraft findings. Unfortunately for them, the aliens have infected a dog, which has found its way to their facilities. The aliens themselves can be viewed more as a virus, which infects a living subject, takes over the host allowing it to infiltrate a species, and gestates into a new form of life, which has an appetite for destruction. Needless to say, there are a lot of tentacles, crab-like creatures, mutated humans and dogs, and gallons of fake blood throughout. The film's hero, R.J. MacReady, played by Kurt Russell, saves the future of the planet by destroying a monstrous "Thing," while at the same time most likely sealing his own fate.

Spatial depth, a contributing factor to a soundscape, is given to the American research facility with the use of diegetic music. The character Nauls blares *Superstition* by Stevie Wonder, a perfect song choice for this movie, through a stereo. While the music is playing, the camera cuts between different rooms throughout the complex. The music is panned differently and the volume is different to reflect the visual perspective. The variety of mixing establishes the idea that the compound is quite expansive, yet at the same time confined to some degree since the music is heard everywhere.

⁴ *The Thing from Another World*. Prod. Howard Hawks, Dir. Christian Nyby, Perf. Margaret Sheridan, Kenneth Tobey, and Robert Cornthwaite. Winchester Pictures Corporation, 1951.

The soundscape is used to create tension and constantly remind the audience of the dire situation the American research team is facing during an Antarctic winter. Most scenes include the sound of a winter storm, which is wreaking havoc on the research compound and its surroundings. The presence of the winter storm sound constantly reminds the viewer that the research team is very much isolated from the rest of humanity, and adds pressure and suspense to the group of people that is becoming increasingly frazzled as they try to figure out what is happening to the dogs and each other. The outside ambience is not present in the interior scenes until the crew comes back from investigating the other research base and brings a charred Thing back with them. From that moment forward, the storm is present in the soundtrack in varying amounts. One exception is during the autopsy scene following the scene of the dog turning into the Thing. The use of varying amounts of winter storm ambience provides a nice contrast between hectic and calm.

Panning techniques vary throughout the film. Quite often the panning shifts as the view from the camera shifts. During a scene in which the characters Childs and Palmer hang out and watch television, the sounds, most notably that of the television, shift as Palmer gets up to change the tape in the VCR. A contrast to this is encountered in the following scene in the “rec room” when some of the characters are playing cards, and a dog runs under the table and runs into Bennings’ wounded leg. In this scene, we hear some diegetic music playing in the left audio channel sounding as though it is coming from a radio. As the scene changes perspectives, the music remains in the left channel.

Another good use of panning occurs during some of the many gunshots throughout the film, and causes synchresis. One instance occurs in the opening montage when Norwegian researchers chase an infected dog. As they approach the American facility, gunshots are fired on the right side of the screen, whizzing noises occur in the middle, impact sounds in the left-center, and ricochet in the far left channel. This has the effect of bringing the viewer into the middle of the action. It gives the viewer the sensation of being caught in the crossfire, along with the American researchers in the film. The scene is edited such that the viewer sees a person fire a gun, and then the scene cuts to a different location where the viewer sees a puff of snow or smoke. Synchresis causes the viewer to assume that he or she just saw an actual bullet leave the gun, fly across the screen, and hit something.

2.2 Sin City

Frank Miller's Sin City (2005), directed by Robert Rodriguez and Frank Miller, has a comic-book-turned-movie aesthetic. The overall sound design, credited to Craig Henighan, moves away from the literal quite a bit. This departure from the literal goes beyond the normal escape from naturalism, which usually includes larger than life fighting sounds like those heard in Steven Spielberg's *Indiana Jones and the Raiders of the Lost Ark* (1981) or Robert Rodriguez's *Desperado* (1995).

Sin City is very picky as to which *materializing sound indices* (m.s.i.) are present at any given moment in the soundtrack, and how the elements are mixed together. *Materializing sound indices* are “sonic details that supply information about the concrete materiality of sound in the film space” (Chion 223). An example of where m.s.i have

been left out is seen approximately 00:22:20 into the film, where the character Marv drags another character out of the door of his car, face down. The car itself only makes a revving sound for the first split second of the sequence, and then fades into the background. The sound of the man being dragged on the pavement is treated in the same manner, fading out quickly. The dragging sound is more like the sound made from running your hands over a wind-breaker jacket. There is not the flesh-tearing sound you would expect from such a gruesome event. The main elements are Marv's dialogue, and some non-diegetic music. The soundscape, therefore, departs from the literal by omitting certain elements.

The attenuation of the certain elements of the soundtrack to make room for dialogue is seen throughout. Often, the soundscape is attenuated so that a narrator's voice can be heard without disruption. Voices of the various narrators are especially loud in the mix. In a blazing gun scene approximately 1:25:06, where maybe 20 machine guns are shredding people to bits, the soundtrack becomes very quiet to make room for a voice over. This variation in mixing techniques, along with some interspersed slow motion sequences creates a dramatic and ethereal scene out of what is essentially a gory scene.

2.3 The Thin Red Line

Terrence Malick's *The Thin Red Line* (1998), sound design by John Fasil and Claude Letessier, takes a surprisingly similar approach to dramatic sound design as *Sin City*. During dramatic moments in the film, the soundtrack is often very quiet and subdued. In a scene approximately 58 minutes into the film, Woody Harrelson's character, Sgt. Keck, detonates a grenade still attached to his belt by accidentally pulling

out its pin. The blast doesn't kill him right away, and provides an opportunity for a very dramatic moment with his squadron. Leading up to this moment, the soundtrack is riddled with rifle shots, and mortar explosions causing a very frantic soundscape. During his slow death sequence, however, the battle sounds become sparse to the point where only the occasional shots or explosions are heard, and these are made to sound more distant than the previous ones. The lack of distracting sound effects focuses the attention of the scene to the drama of Sgt. Keck's final breaths. As he dies, the occasional mortar blasts begin to get closer again, and in a few cases the shells are heard whizzing by. The evolving soundscape described above allows the attention of the film to shift focus from a battle scene, to Sgt. Keck's incident, and back to the battle scene.

Starting around 01:50:00, the soundscape fades away as the Americans are involved in a battle at a Japanese camp, becoming a scene of hyper-real drama. Near the end of the sequence, while there is still quite a bit of commotion going on but the majority of the fighting is done, the sound effects, ambience, and dialogue attenuate until they are absent from the soundtrack. Eventually the music becomes the only element of the soundtrack, until a narrator's voice enters. The effect achieved is a very dramatic moment similar to the scene in *Sin City* involving where the soundtrack was attenuated despite how it would sound in real life.

At 02:34:00 into the film, we are provided with a flashback of Private Tella, which begins just after he is shot. The flashback takes the viewer from the jungle to a time shown earlier in the film, where Private Tella has defected from the Army, and is living with a native tribe, swimming in bright blue waters, in what seems like the most beautiful ocean in the world. He is very happy as he swims around playing gently with

the native boys. The only sounds that are heard are the occasional underwater splashing sounds, mixed very low, which are covered by a bed of dreamy, orchestrated music consisting mostly of delicate strings. Just before the picture goes back to jungle, we hear a deep thunder clap, which is probably the sound of the gun that just shot Private Tella, pitched shifted down. It's a very beautiful and powerful sequence both visually and sonically. The lack of materializing sound indices during the flashback show that in Private Tella's last moments, he was transferred back in time to a place that he considered perfect.

2.4 Wall•E

Andrew Stanton's *Wall•E* (2008) is an animated film set in the distant future about a robot that cleans up trash for a living on the now uninhabited planet of Earth. The film won an Oscar in 2009 for Best Animated Feature Film of the Year and was nominated for Best Achievement in Sound and Best Achievement in Sound Editing.⁵ A futuristic, animated film of this nature is a challenge for a sound designer because they are literally given a blank slate, and have to fill in the entire soundtrack with everything from ambience to sound effects, voices, and music. Along the way, the designer has to create sounds that sound "futuristic," but that listeners can understand and easily associate with what is happening on the screen.

⁵ *Wall•E* was also nominated for Best Achievement in Music Written for Motion Pictures, Original Score (Thomas Newman), Best Achievement in Music Written for Motion Pictures, Original Song (for the song "Down to Earth" written by Peter Gabriel (music/lyrics), and Thomas Newman (music)), and Best Writing, Screenplay Written Directly for the Screen (Andrew Stanton, Jim Reardon, and Pete Docter). The Motion Picture Sound Editors, USA awarded a coveted "Golden Reel Award" to this film for Best Sound Editing – Sound Effects, Foley, Dialogue and ADR Animation in a Feature Film. Visit www.mpse.org for more details.

Ben Burtt is responsible for the sound design and mixing of *Wall•E*, as well as designing all of the robot voices and sound effects. He even contributed his own voice to the main character, and a side character named M-O.⁶ Burtt is best known for his work in both the *Star Wars* and *Indiana Jones* franchises, and he also designed ET's voice in the 1982 smash hit *E.T.: The Extra-Terrestrial*.⁷

In a featurette, which accompanies the Blu-Ray version of the film, Ben Burtt discusses how he designed the sound of the laser gun in EVE's arm (Extraterrestrial Vegetation Evaluator). He explains that he hung a slinky up high, allowing it to stretch, placing a contact microphone on one end, and tapping it on the other with a metal object. Because high frequencies travel faster than low frequencies, and the vibrations have to travel through the entire coil of the slinky, the high frequencies arrive first, followed by middle frequencies, and finally the lower frequencies. The effect is a very fast downward glissando. This sound had been used throughout the *Star Wars* movies for laser blasters.

This film makes use of leitmotifs. The opening of the film presents the viewer with the first iteration of "Put on Your Sunday Clothes," which is from the musical *Hello, Dolly*. The scene starts in outer space, and flies to Earth, setting the viewer up with a visual of the landscape of the film. Once the film reaches Earth, the music dies out in a wash of reverberation. After a few moments we are introduced to Wall•E (Waste Allocation Load Lifter Earth-Class), and the song comes back, this time emanating from a cassette player built into the robot's chassis. Throughout the next few minutes, as we are introduced to the main character, it becomes very apparent that this is his favorite

⁶ M-O is simply pronounced like the name "Mo."

⁷ *E.T.: The Extra-Terrestrial*. Prod. Kathleen Kennedy and Steven Spielberg, Dir. Steven Spielberg, Perf. Henry Thomas, Dee Wallace, Robert MacNaughton, and Drew Barrymore. Universal Pictures, 1982.

song, as it returns several times. There is even a scene where Wall•E uses a hubcap as a hat, and mimics the dancers in the musical, as he also happens to have a VHS version of *Hello, Dolly*. The song returns many times in a wide variety of manners, including as a sound effect sonic motif. Occasionally, various robots will hum the melody from the tune, or speed up and slow down its mechanical functions producing the melody – as though they are playing themselves as musical instruments. Wall•E does this himself by moving his tank-like treads back and forth in rhythm.

Through the use of this leitmotif, Wall•E is assigned a personality. The use of sound also contributes to the robots having and showing emotions, which, when mingled with visual clues as to their emotions builds a nice depth of character in what we usually think of as an emotionless, inanimate object. Burt had this to say on the subject:

Most of the feelings attributed to Wall•E, or EVE, or the other robots is because of the expressiveness of their sound effects. They might groan, but the way they groan tells you how they feel rather than discreet words. (qtd. in Chuck the Movie Guy)

Chapter 3

Chapter 3 will explore my work on the sound for the film *Taffy, Cigarettes*. This was the first film I worked on for my thesis work. Sound design themes, sonic motifs, soundscapes, and noteworthy moments of synchresis will be discussed in this chapter. I will demonstrate how various sound design tools can be used to enhance character relationships, character traits, and the plot. Parallels will be drawn between the films discussed earlier, and concepts utilized in *Taffy, Cigarettes*. At times, I will make reference to audio and video clips included on the supplemental DVD. The audio clips can be found in a folder called “Audio Clips,” and the video clips can be found in a folder called “Video Clips.” The film *Taffy, Cigarettes* can also be found on the supplemental DVD.

Taffy, Cigarettes

Taffy, Cigarettes was written and directed by Marty Stano, a University of Michigan alumnus, and produced by the Encourage the Film-making Experience (EFEX) Project during the summer of 2008.⁸ I had the pleasure of being the sole post-production audio engineer for this project. I acted as dialogue editor, Foley artist, sound effects creator and editor, ADR recordist and editor, sound designer, and final mix engineer. While undertaking all of these tasks by myself was extremely time consuming and difficult, the experience was great for two reasons. The first was the ability to do my

⁸ The EFEX Project is a summer class in the Screen Arts & Cultures program at the University of Michigan. The film was work-shopped with Van Buren Alternative & Belleville High School.

own quality control, and the second was that I gained experience in the post-production process from beginning to end.

Taffy, Cigarettes is a coming-of-age story about a boy named Kevin who is hampered in life by his dead-beat mother and some bullies. The story takes place over the course of two days, and follows Kevin and his friend Travis through the hardships of growing up. Kevin eventually stands up to his adversaries, and becomes a man by taking charge of his destiny.

At the heart of the sound design for this film was the theme of time, which was suggested by Stano. “Time” was supposed to enhance the coming-of-age aspect of the story line. The overall idea for the rest of the sound design was to create natural atmospheres and sound effects with minimal unnatural sonic enhancements. While I stuck to this to some degree, Marty allowed me some liberties, and was always willing to work with my experimentation. Most of the time, however, the more experimental additions I made were eventually vetoed, or I was asked to scale the sounds back.

The “time” theme was fun to work with, and easily handled by enhancing certain sounds, which were already a part of the action or implied by the picture – diegetic sounds. The first example of this is Travis’s bicycle. The production track didn’t contain any sounds from the bicycle as the actors were closely mic’ed, often using a wireless lavalier, or lav for short – the type of microphone you often see on a news anchor’s lapel. I decided to emphasize the sound wherever I could to act like the ticking of a clock. To do this I simply brought my 18-speed bicycle into my home studio, flipped it upside down, and recorded the clicking of its gears.

Sid's watch was emphasized with a rattling sound to emphasize his role in the story, not only as a purveyor of taffy and cigarettes, but also as a friend of the children. The sonic motif draws Sid into the "time" theme, thus linking him to Kevin. Sid is the local convenience store owner, and according to the dialogue knows the kids and their parents and is somewhat involved in the lives of his fellow community members. He even alludes to having seen their latest baseball game. I recorded my own watch as Foley, matching it to Sid's motions. The watch rattle gives Sid more sonic detail, while drawing attention to his watch, a keeper of time.

Yet another example of the "time" theme occurs while Kevin and Travis are crossing a bridge over a river. Travis's bicycle is ticking away while Kevin taps his knuckles on the wooden railing, again like a clock. I recorded Foley of my own knuckles wrapping against a 3-ring binder that serves as a log-book for the studio in which I was recording and mixing this film. There is a moment when Travis mentions that one of the bullies has failed the 8th grade, and will be back again next year. Kevin's reaction of dismay to this is enhanced by the omission of a tap to create a sort of hiccup, as though his heart has just skipped a beat.

The bridge scene also enhances the time theme because they are crossing a river. Water flows much like time – usually forward, and often at different paces. Near the end of the scene, after the terrible news that the eldest bully, Jimmy, has failed, I made the sound of the river increase in intensity, creating a swelling of the soundscape. Before I get to the how, I must explain that I used two different "river ambience" tracks for all of the scenes near water, including the railroad tracks scene. Both were drawn from an

online sound effects bank.⁹ The first river ambience (audio clip AC3.1) is a close-perspective recording of a bubbling river. The second river ambience (audio clip AC3.2) is a distant-perspective of a large river coursing through a ravine. The second river sample sounds much more like white noise. To add an element of terror, I automated the volume on the second river sample to bring it to the forefront as the boys cross behind the camera. The increase in the static sound, or monotonous drone, adds tension to the moment.

The first interior house scene shifts attention between Kevin's soundscape, and his mother's soundscape in a short span of time. The scene starts off with Kevin collecting bottles and cans around his house. I emphasized the action of the bottle collection in a musical fashion with peaks and valleys. This was achieved by using a sonic motif – Kevin's enhanced footsteps when he goes back for the can on the floor, and when he enters the kitchen. The original sound file is from the production track when Kevin goes back for the can on the floor. Here the footsteps were compressed and the volume was automated to increase as his steps grew nearer the close-up of the can. This added weight to the situation by emphasizing the need to not only clean up but also salvage every available refundable container. The same sound file was used when Kevin enters the kitchen.

Before Kevin enters the downstairs area we are visually introduced to his mother and sonically introduced to her soundscape. But before we are introduced to the image of her, we are introduced to her vices: an oxygen tank, pills, cigarettes, and her lo-fi

⁹ www.soundsnap.com - You need to register and purchase a membership to download sounds. This changed while I was working on *Taffy, Cigarettes*, originally a free-download site. The memberships are worth the cost because of the wide range of high quality sound effects they host.

television tuned to a game show. At this moment we are completely consumed by her world. The first sound added to her character was the oxygen tank. I used the sound of a respirator breathing sound, and an electronic beep, which was taken from a hospital heart monitor sample. In the end, the electronic beep was eliminated because it distracted from the scene. If the electronic beep was turned up enough to be heard clearly and intelligibly it became the focus of the scene where the focus needed to be on the tension between Kevin and his mom. If the electronic beep was turned down low enough for the focus to be put on the tension between the two characters, then it sounded out of place, and its source was confusing.

While we are still getting to know her, Kevin trots down the stairs still in pursuit of refundable bottles and cans. He is only an afterthought in his mother's world, which is equally portrayed by the very quiet sonic presence his footsteps contribute, until he enters the kitchen. Once Kevin is in the kitchen we are shoved back into his world visually, as well as sonically with the aforementioned weighted footsteps. In this cluttered and dirty kitchen, we can still hear the sound of television game show. During this moment the two characters' soundscapes are mixing together, creating tension. Kevin carefully puts one last can in his bag, quietly now, trying not to provoke or disturb his mother, and hoping to avoid even being noticed. He is near his mother, engulfed in the sounds of the TV and her breathing machine. He is now immersed in her world both visually and sonically. Unfortunately, as he passes his mother and heads for the front door, she finally speaks up.

After a quick jump-cut to the exterior of the house, where Travis patiently waits for Kevin, his mom gives him some money with no explanation as to what is expected of

it. Judging by Kevin's expression, this is what he was trying to avoid – when normally receiving money is a good thing. At the end of the scene, on the close-up of the mother, I brought the attention back to her problems by bringing out the low frequencies of the respirator sound using equalization (EQ), and increasing the sound using volume automation. These changes increased the tension of the moment. The idea was to temporarily turn her into some kind of villainous monster, and foreshadow the negative reason for the exchange of money.

The two television shows, also called “on-the-air” sounds, contributed to the soundscape, and represented the trash TV Kevin's mom spent all day watching.¹⁰ I created both of them using my own voice as the narrator for each. I included music samples, TV game-show sound effects, and a studio-audience applause track in the first, and only music samples for the second. The raucous nature of the game show, “Wheel of Destiny” (audio clip AC3.3), enhanced the clamor of the bottle collection in the first house scene. In contrast, the dark nature of “Mystery Files: Uncensored” (audio clip AC3.4), called for fewer bells and whistles, acting more as a mood setter for the tension created by the mother's ensuing interrogation into where Kevin has been, and where her cigarettes have gone.

Stano and I mulled over the second television program, “Mystery Files: Uncensored,” particularly the manner in which it played out and lent itself to the overall scene. The major issue we ran into in this scene was the moment when Kevin swears at his mother, catching her off-guard, which leads to a large dramatic pause in the film. I tried using coughing and wheezing sounds while her back was to the camera to fill this

¹⁰ Chion defines “on-the-air” sound as “Sound heard in a film narrative that is supposedly transmitted by radio, television, telephone, or another electronic source and that consequently is not subject to “natural” laws of sound propagation” (Chion 223).

void, but it wasn't convincing. The TV show filled the gap, but it distracted from the tension between Kevin and his mom. The final conclusion was to fade the TV show out during their conversation leading up to the dramatic pause. While this moves the film away from the veridical aesthetic initially decided on, it was a "magic of moviemaking" trick that was perfect for this situation. The result is a heightened tension between Kevin and his mom, as the viewer sits through several seconds of dead air waiting to see how the mother will respond to her defiant son.

A third "on-the-air" sound is encountered in the first convenience store scene. The inclusion of the baseball radio broadcast (audio clip AC3.5) enhances the soundscape of the convenience store, and, like the watch rattle discussed earlier, helps increase the bond between Sid and the two boys, Kevin and Travis. Sid, Kevin, and Travis have a common interest in baseball, as the boys play baseball, and Sid is a fan. The baseball broadcast serves a third purpose, which is to enhance the dramatic flow of the scene. The broadcast begins at the beginning of the scene with the simple action of a base hit. As the scene unfolds the crowd heard on the radio begins chanting, and eventually a player hits a home run, which corresponds to Sid agreeing to sponsor the boys' baseball team. Video clip VC3.1 shows the scene with ADR, ambience, foley, and sound effects without the baseball broadcast. Video clip VC3.2 shows the same scene with the addition of the baseball broadcast.

A flashback occurs during the second convenience store scene, during which the director didn't want any sonic cues to accompany the visual leaps in time. The first few times I watched the film, however, I hardly even noticed that there was a flashback. Video clip VC3.3 shows the flashback scene with a lack of an aural cue.

I prepared a couple of experiments for the director to show him that the scene would greatly benefit from some sort of sonic change during these two quick leaps. For the first experiment (video clip VC3.4) I treated the leap in time literally, and included the sound of a ticking clock with added reverb. Also included in this experiment was the swelling of an ambience track, which begins after the bullies enter the convenience store to build tension as they come in close proximity to their foe, Kevin. The side effect of this experiment was that the entire film moves away from the present momentarily, and these solid leaps were too jostling to the experience. Not surprisingly, the director didn't like this version.

The director insisted that the sounds from the convenience store remain present in the soundtrack. So, for the next experiment (video clip VC3.5) I tried distorting the present sounds, using a guitar amplifier simulator. This move shows that while Kevin is thinking back to the altercation on the railroad tracks, the film remains firmly planted in the present. With only a few adjustments to the parameters of the amplifier simulator, some better mixing, and the addition of the non-diegetic music, we arrive at the final product (video clip VC3.6).

I used the sound of a train horn throughout the film as yet another sonic motif. This sound is used to bookend the film as it occurs in the opening scene, and then again in the final scene. It is also heard twice in the middle of the film during the confrontation between Kevin and the bullies on the railroad tracks. The sound effect is used as both a diegetic and non-diegetic tool.

In the opening scene the train is heard off in the distance as an element of the auditory setting, which contributes to the soundscape. The intention of these sounds is to

give extra spatial depth to a scene beyond the normal ambience. As the scene unfolds we hear and see a river, leaves fluttering in the wind, and the boys conversing in a tree. The very distant train horn reminds the listener that there is in fact a world beyond the confines of the movie screen.

The train horn was also used as a metaphor for power, and the struggle for power. A train is obviously a very large, powerful machine, which revolutionized the shipping and travel industries. So, not only is the machine physically large and powerful, its implications on the world are also quite large and powerful. Furthermore, a train's horn is intended to warn people about the danger that is coming, giving them time to move to a safe place.

The bullies exude power through their mistreatment of Kevin on the railroad tracks. The train horn is heard as the bullies approach him from screen left. It acts to heighten tension by providing an almost musical accompaniment to their arrival. However, the sound was kept fairly quiet in an attempt to keep it more of a subliminal sound, and prevent it from standing out over the sound of their footsteps and derogatory commentary alluding to the lack of masculinity of Kevin and Travis. At this point in the film, the bullies are using their power over Kevin, and thus the sound of the train belongs to them.

The train horn makes a final appearance in the closing scene of the film. During the altercation outside of the party store, Travis is on the ground being kicked around. Kevin is also on the ground after being punched by one of the bullies. Kevin finally snaps, and decides that he and his friend have taken enough abuse. As he gets up, the train horn sneaks through the music and the sound of Travis being kicked. It builds until

Kevin hits the leader of the bullies over the head with a glass bottle. The train horn being associated with Kevin's actions shows the transition of power from the bullies to Kevin, especially because, devoid of a leader, the other bullies can't do anything except stand and pant in disbelief.

Chapter 4

Chapter 4 will discuss my work on the sound for *Grace*, the second film I worked on for my thesis. I will explain how a sonic motif can be used simultaneously as a transitional element, a metaphor, and an aid to sonic contrast. In this film, various soundscapes were used in conjunction with filming techniques to contrast different realities. I will also show how sound effects can be used to draw the viewer into the mind of a character. There will also be a discussion about diegetic versus non-diegetic music, and how the borders between the two can be blurred, so as to confuse the audience. At times, I will make reference to audio and video clips included on the supplemental DVD. The audio clips can be found in a folder called “Audio Clips,” and the video clips can be found in a folder called “Video Clips.” The film *Grace* can also be found on the supplemental DVD.

Grace

Grace was written and directed by Natalie Williams, a senior in the Screen Arts and Cultures program at the University of Michigan. The story is about a girl, named Grace, who lives in her own television-inspired fantasy world. She watches this world start to slip away after she meets a quirky young man who forces her to engage in reality. When I read the script for this film, I knew it would lend itself to my love for over-the-top sound effects.

The part of the script that initially drew me in was the inclusion of a raucous ending consisting of animation overlaying filmed scenes and sets built out of cardboard and construction paper. These were supposed to come crashing down when Grace

realized that she not only liked Alex, the boy she falls for, but also needed him to keep her grounded in reality. Due to production problems, the animation and cardboard idea was scrapped very late in filming, and it was up to me to provide the build-up and destruction of the varying realities through sound design. The project began as a challenge in making a wild visual idea work sonically. However, the film ended up lacking much of a visual build up, and needed the sound to build the tension.

The main sound design behind *Grace* was driven by the two different realities presented visually. The first is Grace's television-inspired world, which I will refer to as the "TV reality." The film takes us through several spoofs of everyday television programs including soap operas, sitcoms, commercials, and reality TV. The other reality, which I will call "true reality," is supposed to portray how a normal person perceives the world around them. However, the true reality presented to the audience is still a filmic hyper-reality. In order to create a greater contrast between the two realities the negative aspects of the true reality were enhanced, and the positive aspects and humor of the TV reality were boosted. This was achieved both visually and sonically.

The soap opera in the opening scene of the film provides an interesting area of debate on the classification of diegetic and non-diegetic sound and music. We begin with Grace being a part of the television program, during which time the music is seemingly non-diegetic, but the sounds created by the characters, such as footsteps, are diegetic because they are happening right there in the scene. Next we cut to a shot of Grace watching a television program containing the same sounds and music, and suddenly the music becomes diegetic because it is now an "on-the-air" sound. This transition introduces the audience to Grace and her reality in a very confusing manner. In the true

reality, where Grace is really just sitting watching TV, we see only her eyes. This makes it difficult to make the connection between the Grace who is a part of a soap opera and the Grace who is watching her TV.

However, during the scenes in which Grace is a part of the soap opera, all sounds and music can also be interpreted as “internal sound” – sounds that are unique to a particular character’s mind, and cannot be heard by other characters in the film (Chion 76). This is because she is imagining herself in the context of the soap opera. All of the sounds, including the music, are actually diegetic because they are suggested by the scene, and created by the “orchestra” in Grace’s mind. Until the audience fully understands that most of this scene is actually occurring in the mind of the main character, though, they cannot determine which sounds are a part of the scene and which sounds are external to the scene. When I speak of something being a part of a scene versus something that is external to the scene, I am making a distinction between what the characters in the movie perceive. Non-diegetic music is music that the characters in the film would not be hearing, whereas diegetic music is music that is being somehow emitted in the character’s world, whether it is coming from a radio or a band playing in the background or off-screen. In Grace’s mind, however, while she is imagining that she is a part of the soap opera she would also be hearing the musical accompaniment because she is imagining it to be a part of her life.

During the opening title sequence, we are introduced to one of Grace’s TV realities, which is very much like the opening sequence of a television show. There is music that describes the main actor, and the film is played back in slow motion, adding a little drama to the action. Visually, the sequence is very serene. I chose to leave out any

sound effects of Grace walking, and give only a hint of ambience until the very end of the sequence. This lack of materializing sound indices adds to the ethereality of the scene. It suggests a state of perfection (Chion 114).

The scene suddenly cuts to the true reality, and the soundscape completely changes. Grace finds herself in a cold, overcast, windy, and noisy place. No sound was recorded during the filming of this follow-up scene, so it was my task to create a world that starkly contrasted Grace's imagined world. The use of layered ambiences proved effective to give the scene a solid foundation of discomfort. This discomfort was constructed out of two different tracks of wind ambience (audio clips AC4.1 and AC4.2), and a recording done atop an airport parking structure (audio clip AC4.3). The use of two stereo wind tracks allowed me to set a static howl and play with varying gusts to give the soundscape extra character. The airport ambience provided a general rumble of activity, which underscored the wind. To give the scene more spatial depth, I included the sound of distant geese (audio clip AC4.4), which also contrasted with the sound of a song bird from the previous scene. The final touches included footsteps, which were omitted from the previous scene, and a snow-blower (audio clip AC4.5) as an added element of the auditory setting.

As in *Taffy, Cigarettes*, I once again made use of sonic motifs. The main motif in *Grace*, is the sound of an airplane fly-by (audio clip AC.4.6). Unlike what I did with *Taffy, Cigarettes*, I used the airplane sound in a theme and variations configuration by first stating the main theme, and then repeating it with alterations. The first use of this sound, in the previously mentioned "cold scene," provides several effects. On one hand the sound of the airplane helps the contrast between the serenity of the opening credits

sequence and the harshness of the cold scene, emphasizing the two different soundscapes. We move from a world of beautiful, sparse sounds with musical accompaniment to a world filled with very intimidating undertones. Another function for this sound is as a transitional element. All three of the iterations in the film occur just before a switch from one reality to another.

The sound to act as an aural metaphor showing that the true reality is “flying right over Grace’s head.” While this metaphor is not something that the audience would necessarily pick up on, I am reminded of a quote from Walter Murch, who said:

I always try to be metaphoric as much as I can and not to be literal. When you’re presented with something that doesn’t quite resolve on a normal level, that’s what makes the audience go deeper. (qtd. in Jarrett 8)

The second time the sound is heard (audio clip AC4.7) the same metaphor holds true, but this time over Alex’s head. At this point in the film, Grace has started to realize she is falling for Alex, but he doesn’t understand yet what he means to her.

Like the train sound from *Taffy, Cigarettes*, the airplane is used acousmatically, because the source is unseen. The first use of the airplane sound can be seen as diegetic because it is plausible that as the camera pans up the plane may be passing just off-screen. This perception doesn’t translate well with the use of a stereo playback setup in which the speakers are situated in front of the listener, and on either side of the video image. However, listening through headphones reveals a different perception, with the

airplane sounding as though it is within one's head. Using headphones, I tend to perceive the airplane as being somewhere behind me.

The second and third time that the airplane motif is heard I altered the sound to make it fit the moment more fluidly. As previously mentioned, the second instance occurs during a shot of Alex as he flips through a magazine in the stock room of the store in which the two characters work. This time the sound has been altered so as not to be perceived as an airplane, but as an odd sound, which follows the same stereo gesture as the first, panning from left to right. I used effects called "harmonic rotation," and "BackwardsFragment5."¹¹ The third occurrence of the airplane (audio clip AC4.8) comes during the final Coffee Castle scene. I again used the airplane sound from the second usage, but with a flange effect added.

A moment of synchresis was artificially created in the scene where we first meet Alex (video clip VC4.7). I wanted to get the audience involved in Grace's initial reaction to meeting him. She is confused by his presence, as he has snapped her out of one of her television-inspired fantasies, and is a little repulsed by his invasion into her life. In order to heighten the audience's awareness of her repulsion towards Alex, I accentuate the sound of his neck and knuckles cracking, knowing that these sounds make some people cringe, as though they are hearing nails grinding on a chalkboard. For the sound of his neck cracking I used the sound effect of cracking knuckles. I wanted to punctuate this "three-chord phrase" of neck, neck, and knuckles with something outrageous for the final cracking. I had previously done experiments with celery because I had heard they made

¹¹ "Harmonic Rotation" is found under Bias' Peak Pro 6 DSP menu. "BackwardsFragment5" is an effect that comes in a plug-in package called SFX Machine LT, which came with my version of Bias Peak Pro 6.

good bone-cracking sounds. I had found that taking several pieces of celery and twisting them as they were bent to snap produced quite a gruesome effect. It is this sound that the audience hears and associates with the sight of knuckles cracking.

Conclusion

Sound and picture influence each other quite a bit, and combine to create an experience greater than the sum of its parts. Sound design tools such as sonic motifs, soundscapes, and synchresis can be used on their own or in conjunction with one another to create sonic and metaphorical depth, thereby adding value to a film. As was seen in the analysis of John Carpenter's *The Thing*, soundscapes can be used to inflate drama. *Sin City*, and *The Thin Red Line* showed that the use of varying materializing sound indices, and levels of soundscapes was an effective way to add a dramatic flair to a scene. And *Wall•E* showed that sonic motif development, and a good understanding of synchresis, can create an interesting, Oscar nominated film.

My work on *Taffy, Cigarettes* was fruitful in helping me realize all of the things I set out to do, which includes producing a film that the director and I are very proud of. The film was given additional meaning through my sound design and general audio work. The collaborative aspect of this project opened up a cornucopia of ideas, some of which weren't even discussed in this paper.

Grace proved to be an eye-opening experience into the differences between diegetic and non-diegetic sound. Every facet of this thesis made its way into that film, and in an extremely short amount of available working time. The picture had a direct effect on the sound, and the sound certainly had a direct effect on the picture.

My experience in post-production audio has taught me not to take any sounds for granted. Even the smallest, seemingly unimportant sounds can add important sonic details to a film's soundtrack. I learned that character relationships have the potential to be enhanced through the use of sonic motifs and soundscapes. The analysis of film

soundtracks made me aware of the level of detail that was achievable. I had been careless in some of my earlier attempts, and the result was a weak or ineffective soundtrack. Theoretical knowledge of synchresis has enhanced my ability to analyze a film's soundtrack and understand the effect a particular sound might have in a given situation. The theoretical knowledge also helps in taking observed ideas and adapting them for my own purposes, using different sounds to create a similar effect.

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