

Sound Isn't Always What You See:

An Analysis and Demonstration of the Perception of Sound Effects in Film

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Terms:

Sound Design - The art and practice of creating soundtracks for a variety of needs.

Sound Effects - A sound other than speech or music made artificially for use in a play, movie, video game, or other broadcast production.

Post Production - With respect to audio, it is the process of creating the soundtrack for moving images. It involves sound design, effects, Foley, ADR, sound editing, audio mixing, and so-on.

Digital Audio Workstations (DAW) - A digital system designed for recording and editing digital audio.

Foley - Concerned with the addition of recorded sound effects after the shooting of a film.

Foley Stage - A location where the foley process takes place, usually home to a lot of miscellaneous objects and environmental textures.

RIM - Middle Tennessee State University's Department of Recording Industry, which houses the Audio Production, Music Business, and Commercial Songwriting majors.

Logic Pro - A digital audio workstation created and owned by Apple.

Abstract:

The trickery behind foley is often never considered by general visual media audiences. Rarely is the sound effect heard caused by the actual object or action on screen. After many years of blind association, however, the faux effect will live on with a certain image forever. This analysis and mini-demonstration series is meant to bring forth the “misconceptions” of sound effects. I will showcase the most common foley effects and reveal the truth behind their usual perceptions, as well as demonstrate the creative and practical processes of capturing foley effects. To aid with my project, I have spoken with foley artists John Roesch and Alyson Dee Moore. Their opinions and personal experiences have helped significantly with shaping the techniques I will be using during my demonstration, which will include a video clip from *Jurassic Park* and *The Revenant*.

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Introduction:

As a young girl, I was obsessed with dinosaurs. By the time I was four years old, I knew just about everything there was to know about them. For the longest time, I wanted to become a paleontologist so that I could discover even more about these extinct beings. It was around this time that my parents introduced me to *Jurassic Park*. I loved it, but my curiosity ultimately got the best of me. I did not remember ever learning about the sounds that dinosaurs made, so how could they possibly know? Well, to put it simply, the answer is that they also did not know. This is where the creative imaginations of the film's sound designers had to come into play. As explained by Darryn King in his article "How to Make Velociraptors Purr: Inside the Sounds of *Jurassic World*",

The key to believable dinosaur sounds, it turns out, is rooted in the actual sounds of the animal kingdom. The sounds of the Brachiosaurus, Raptors, T. Rex, and the rest are in fact the meticulously mixed, matched-and-mashed-up sounds of creatures much closer at hand (and much less extinct). It's an old Hollywood trick, used on everything from *King Kong* to *Star Wars*, but it's everywhere in *Jurassic Park*, from the braying donkey that lent its voice to the Brachiosaurus to the slowed-down baby elephant's trumpet that became the T. Rex's roar (King, 2015).

This type of perceptual manipulation is key in allowing the audience to actually believe the sounds that they are hearing are real, when in fact, it could just be tortoises mating or a long cardboard tube.

Throughout childhood, I found myself fascinated with sound design and sound effects in movies. Films like the *Harry Potter* series, *Avatar*, and *Fantastic Beasts* all invoked my inquisitiveness to discover how they created and captured so many unique sounds. Most people are not consciously paying attention to the sound in film, let alone considering how the sounds were even made in the first place. This process is not limited to just movies; video games, documentaries, and other forms of visual media all use sound design to some degree. Through watching documentaries on the making of films, I was introduced to the functions and techniques of sound design and sound effects. In high school, I was enrolled in a music technology class for two years. This class gave me the opportunity to effectively understand and utilize recording and production techniques, as well as provided me with experience on varying digital audio workstations. My teacher recognized that I had a knack for it and challenged me with projects. He also introduced and convinced me to further pursue Audio Production as a career path. My passion for this class and my curiosity for Sound for Picture led me to where I am today. I now get to focus on Sound Design and Foley Art everyday and I could not be happier. I am very excited to share this art with others and enlighten them on the tricks Foley artists and sound designers use when creating sound effects for film.

Brief History:

A Foley artist is charged with bringing visual media to life through sound. One must not only have a creative and limitless mind, but also a deep knowledge and appreciation of sound, music, and rhythm. One example of such an individual is Jack Foley, the man whom the term comes from. Michael Maher's article "Foley: The Art of Making Sound Effects" provides us with a brief look into Foley's life and how his journey began.

Jack started off his sound career by creating sound effects for live radio broadcasts. Instead of using sound libraries from the early programs of his time, he utilized tools that were available to him to create realistic sounds. In 1914, Jack began working for Universal Studios. Shortly after joining the studio, "talkies"-films that had dialogue- became really popular. Wanting to add more excitement to their films, studios began to attempt to incorporate authentic sound effects. In order to satisfy this demand, Jack assembled a team that would project the film on a screen and simultaneously record his performed sound effects, which were mostly just footsteps. He continued perfecting this practice and performing effects until his death in 1967. Jack Foley continues to be strongly revered in the industry, and many of the techniques that he developed are still used today (Maher, 2016).

Thanks to technological advancements, newer techniques can be implemented alongside Foley's older techniques to create an even wider array of sounds. Foley artists can utilize normal everyday objects in a series of combinations to create seemingly natural sounds (i.e. a feather duster and the spokes of a bicycle wheel to create the sound

of a bird flying). However, with the advancements of audio editing technology, recorded sounds can be altered to create sounds for an unnatural world, such as the *Star Wars* universe. Obviously, we do not live with out-of-this-world creatures, so capturing the sound for a nonexistent alien seems impossible. Luckily, we are able to take natural sounds and digitally alter them to create a very real-sounding alien. For example, if we were to take the cry of a hyena and digitally adjust the pitch and speed of the audio, we could create a very convincing alien language. However, this is only considering the use of new techniques with pre-recorded audio. To provide an example that showcases both the old and new techniques, we will consider the creation of mammoth footsteps. To achieve this, we could take a hefty log stump, wrap it in fabric, and lightly drop it on a dirt mound. This could pass on its own, but you would most likely feel like it is missing something. To fix this, we would digitally boost the lower frequencies. This would help give more “weight” to the six ton creature and make the footsteps both feel and sound natural.

Interviews:

I was extremely grateful to have the honor of interviewing renowned foley artists John Roesch, whose work includes a majority of the *Avengers* films, *Inception*, and *The Dark Knight*, and Alyson Dee Moore, who has worked on *Interstellar*, *What Happened to Monday*, and *Tenet*, for this project. They both shared their experiences in the industry and gave me wonderful insight on how to really kick off my career as a foley artist. Both also made it a point to tell me to walk through any open doors that I may come across on my journey because those doors, while it may not seem like it at first, will take me exactly to where I want to be. For example, John started as a Theatre Arts major. He had no intention of pursuing a career as a foley artist; he actually thought it was a silly job when he had learned of it after helping his peers do that exact thing for a short film project. John continued to go through his set of doors, however, and ended up becoming very successful in the field that he laughed at months before. Alyson encountered a similar set of circumstances. After dropping out of school at the age of seventeen, she became a musician with the hope of soon becoming a sound engineer. She eventually found herself working with a sound editor friend and was then introduced to the foley stage. She fell in love with it and has been a big name within the field ever since.

Setting Up a Foley Stage:

The first step towards creating foley effects is to set up a foley stage. Generally, foley stages are found within production houses or sound studios. Given that I do not have access to either, the foley stage that I worked with was created inside of my home. The foley stage that I built was not nearly as impressive as professional foley stages, but I believe I benefited from the experience. Having very limited resources posed a fascinating challenge, but it pushed me to think long and hard about what I was doing and ultimately enhanced my points and overall demonstration.

I first started the creation of my foley stage by collecting items that I believed would mimic the sound effects I was looking for. For the *Jurassic Park* clip, I already knew that I would need materials that could easily replicate foliage, a gun, and bones breaking. So, for this scene, I grabbed a pile of fake leaves, a pillow, a lighter, some celery and carrots, and a bowl of wet noodles. For the clip from *The Revenant*, I knew I would need materials that could mimic the human body and heavy clothing. I collected a soft pillow, fake leaves, a small bag of cornstarch, a soft and hard leather boot, a thick cardigan, a soft leather jacket, a knife, and an apple. These items are all set to the side until the recording session starts.

I also made sure to set up my phone above my “stage” so that my performances of the foley effects could be recorded live alongside the picture. This video will show a top-down angle, giving the audience the opportunity to see everything that I am doing with the objects and take note of the different ways that I am manipulating those objects. The

short video clips were screen-recorded with my laptop to showcase the clip in real-time with my foley effects.

Recording to Picture/Syncing:

In order to record foley to picture, I needed to open my DAW and create a new session for both the *Jurassic Park* and *The Revenant* clips. I created fifteen audio tracks for the *Jurassic Park* clip and six audio tracks for *The Revenant* clip in preparation for the recording of my foley effects. I also had to choose a microphone with which to record the sound effects. For this project and for the sake of ease, I went with a standard USB microphone. Its portability and easy set up made it the best contender for this project. After plugging up the microphone, I made sure to input monitor the tracks so that I could confirm that the microphone was properly picking up sound. I also made sure to record enable the tracks so that the DAW knew to record any incoming audio information from the microphone after hitting the play button. Once the session was correctly set up for recording, I imported the *Jurassic Park* clip and muted the audio that came along with it.

Once I had imported the video and muted its respective audio track, I watched the clip without any sound. This helped me internally figure out the timing of the clip so that I knew how to best line up the performance aspect of the foley effects with the picture. After these first few watch-throughs, I began the recording process.

For the *Jurassic Park* clip, I utilized the pillow and pile of fake leaves to replicate the sound of the ferns and jurassic floor. The lighter was recorded to recreate the metallic effects of the gun. The celery, carrots, and bowl of noodles were all used together to create the bodily sounds of bones crunching and flesh squishing.

For *The Revenant*, I used the boots, cardigan, and leather jacket in a series of combinations to recreate the heavy furs, fabrics, and leather worn by the actors. The

cornstarch, fake leaves, and pillow were all used to replicate the sound of snow crunching and shuffling. The knife was used in tandem with the apple to create the stabbing and puncture wound sounds.

The final step of the recording process is to make sure that the foley effects line up perfectly with the images and actions on screen. Once the placement of the effects are finalized, the sessions are bounced and, in this case, ready for release.

Conclusion:

I had a fantastic time completing this thesis. I was presented with the wonderful opportunity to interview two of my role models and I will hold onto their kindness and encouragement for the rest of my life. I have been presented with the opportunity to take on a few smaller projects as a result of everything that I have learned as well. I am also hopeful that the demonstrations that I crafted will enhance my foley portfolio and greatly increase my chances of landing an internship or job at a production house. My passion for foley has only been exemplified since the beginning of this project and I am truly excited for what the future holds. The two most important lessons that this thesis, and John and Alyson, have taught me are to be myself and never be afraid of what lies ahead.

Appendix A: Recorded Demonstrations

Two videos were recorded for the sole purpose of this thesis and showcase two video clips from two different movies. The use of these clips is entirely for educational purposes only. All rights are reserved by their respective copyright owners. The demonstrations that I recorded can be accessed by utilizing the html links below.

❖ First Demonstration:

➤ <https://www.youtube.com/watch?v=SFtibr-J8D4>

❖ Second Demonstration:

➤ <https://www.youtube.com/watch?v=wBTCE7GmgY0>

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