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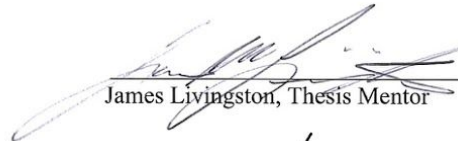Gibson, Alison J., "A Scarlet Ending" (2017). *Undergraduate Honors Theses.* Paper 398. https://dc.etsu.edu/honors/398
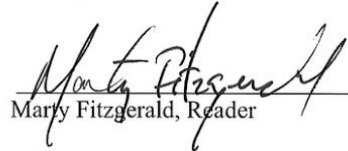
A Scarlet Ending

By

Alison JoHannah Gibson

An Undergraduate Thesis Submitted in Partial Fulfillment
of the Requirements for the
Fine and Performing Arts Honors Program
Honors College
East Tennessee State University

_____ 2 May 17
James Livingston, Thesis Mentor   Date

_____ 5/2/17
Marty Fitzgerald, Reader   Date

_____ 5-2-17
Jennifer Kintner, Reader   Date

_____ 5-2-17
Cara Harker, Reader   Date

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<u>Abstract</u>

Dancing a duet with my shadow by integrating dance and digital media in an elaborate and entertaining performance.

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Introduction

      A Scarlet Ending is a Fine and Performing Arts Honors Program Thesis that expresses both my passions for dance and digital media. Through this thesis, I hope to show how these two disciplines can work together to make a memorable performance. Working as the choreographer, dancer, set designer, 3-D artist, and project manager, I was able to see that my thesis went according to plan. By the end of this thesis, the reader will understand how and why I made the artistic and technical decisions necessary to bring my thesis to life.

History

      I will never forget my first honors class, Artistic Vision. I was accepted into the Fine and Performing Arts Honors Program with Digital Media, but ever since that first class, I knew I was accepted for the wrong art form. I have been dancing for eighteen years now, and it is my true passion and preferred choice of artistic expression. On the first day of class when I learned I could have applied as a dancer, my whole honors experience changed. Every honors project I did revolved around dance, and I only practiced digital media for my normal classes. However, I always knew I wanted my senior thesis to somehow incorporate both disciplines. I wanted to show off what I have learned in the Digital Media Department as well as display how I have grown as a choreographer and dancer. Unfortunately, it was not until late in my senior year that I determined exactly how my thesis would successfully exhibit both.

      My thesis was originally a different idea, but through multiple brainstorming sessions with my thesis advisor and a lack of budget and dancers, we decided on this half-projection half-live performance that is now *A Scarlet Ending.* I had originally been inspired for this idea on a recent trip to Las Vegas, Nevada where I spent the week watching Cirque Du Soliel shows. *Beatles Love's While my Guitar Gently Weeps*, left me feeling more inspired and confident that I could combine digital media and dance, and use them simultaneously in my career. However, I pushed down my desire to create my own

projected dance phenomenon because I had already worked on my original thesis for a year. In December of 2016, when I decided to change my thesis, I immediately started planning for this fresh new project.

I have always been fascinated with shadows while dancing; in fact they distract me rather often while performing. At first, I was going to animate my shadow by using myself dancing as a reference. I started practicing animating myself dancing which was not too difficult, but it bothered me that my animated shadow looked like a rig that I was doing a duet with and not my own personal shadow. In an effort to try and address this, I asked a friend to sculpt a 3D character model of myself that would become my shadow, and I was going to rig it[1]. I quickly realized that even a character model would still not achieve my desired look. And then, the most obvious idea finally came to my thesis professor and me: to video myself dancing and turn that footage into a shadow. This idea rejuvenated my excitement for my thesis, and I could finally develop my idea into a clear plan.

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[1] A character rig is essentially a digital skeleton bound to the 3D mesh.

<u>Choreography</u>

The first step in creating my thesis was to choreograph both parts of this duet with my shadow and myself. Years ago, Lindsey Sterling released a music video in which she danced with her shadow, but they were doing different things at different times. I loved this look as a choreographer, and knew I wanted this *Peter Pan* effect in my project. Thankfully, one of my four dances from my old thesis had the potential to work. I took this piece and began to build from my old idea. Originally, I wanted this dance to be in water, but I could not find a location that would allow me to pour inches of water all over their stage. I tried doing 3D simulated water using Next Limit's RealFlow, and 2D animated water using Adobe After Effects and Flash, but nothing worked with my vision. I let this idea go, but kept the choreography that was specific for the water, and eventually the red skirt replaced the water altogether.

This was one of the most challenging dances I have ever choreographed. I would choreograph the shadow and then choreograph the human to complement the movement of the shadow, or vice versa. There was a lot of back and forth envisioning the partnering in my head and what the dance would look like from the audience's perspective. I choreographed this duet thinking of how the audience would perceive it and how it felt on stage. I start all of my choreography by listening to my music and improvising. I always film my improvisations so I can study my movement and repeat what I like and throw out what I do not. After enough of this process, I had a few key movements to build from, and then I explored which detailed movement I want to bring attention to according to the music. For my thesis, I used *The Funeral* by Band of Horses to move however my heart desired. I did this not only to the *The Funeral* but also to other songs that were not used in my thesis, simply as inspiration for new movement outside of the quality of movement[2] that *The Funeral* naturally brought out of me. I do this process with every dance I choreograph. I like my dances to be mostly music inspired. My old dance studio's motto

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[2] *Quality of Movement*- a particular way of executing the shape of a movement, concerning its dynamic, affective or expressive content.

was "Put emotion into motion," and this has always influenced how and why I dance and choreograph. Personally, I believe my purpose as a choreographer is to take sound and visualize it through movement. I want people to be able to see how music makes me feel. For instance, have you ever listened to a song that made you hurt? Exuberantly happy? Or brought you to tears? I like to take the feelings songs give us and bring them to life.

Music

So why *The Funeral*? I have wondered this myself multiple times during this process. This song has always touched me. It has calmed me down, pumped me up, and everything in-between. It was the song I turned to when I needed to let go and belt out a tune in my car. It has also been very therapeutic to dance to. However, like most songs I choreograph to, after a while I hate listening to them, or question why I thought it was a good song to dance to initially. I will never forget the day I consciously knew I picked the right song for my thesis. I was struggling to choreograph in the Aerial Dance Studio on campus and just wanted to give up and change songs. And then, an ROTC student was walking down from the lockers and stopped to ask me, " Ma'am can you please tell me the name of that song? It just brought back a flood of emotions and memories and I need to go sit in my car and listen to it while I cry." I immediately knew that even though my initial love for this song might have worn off, this early 2000's oldie still emotionally influenced many others. I was no longer dancing to this song for myself, but for anyone who had cried out a bad day to *The Funeral* as well.

This moment heavily influenced my choreography. This song helped me escape anytime I felt trapped inside my mind, and that is where the five projector boxes came from. This was yet another challenge in choreographing this piece. Through many trials and errors, I finally decided on the dimensions of the frames and how high I wanted them to hang from the ground: four feet by seven and thirty-two inches off the ground was the final answer.

Dimensions

The first day I started playing with measurements, I had Jessica Vest and Jennifer Kintner measure how much space I took up during multiple poses, which helped us get four by seven. Jessica Vest stood on crash mats to see how high the shadow needed to be. It needed to be close enough to realistically be my shadow and far enough away to be its own independent dancer. With Jess's help, this was also the first time I had actually seen a section of the dance performed by both the shadow and the human. Seeing that my choreography was actually complementary like I had planned gave me great hope to keep choreographing.

The dimensions were set and my idea was panning out nicely. Thanks to my great friends Conrad Casem and Alexa Edwards at Strategic Placement Group Incorporated, I was able to use their amazing green screen to film. Initially, I wore a

short, black, silk dress as a costume to match the funeral theme. Although our first day of filming did not turn out as successfully as hoped, it was nonetheless crucial to getting the process correct. Conrad allowed us to borrow his new handheld steady cam for his new GoPro. I thought it would be a great idea for the camera to follow in front of me the whole


time, so I had David Hirsh, my videographer, do exactly that. While we were there, I thought this might be the wrong decision, but my human desire to play with the new camera overthrew common sense. Despite

the minor setback, it turned out to be a blessing we had to go back. Editing the first round of footage, I quickly learned that because the camera followed right in front of me I would have to animate the position of the footage in After Effects to stay in place in each projection box and then manually move the position of the footage to the next box when I wanted them to switch. Because the camera followed me, I was always the center of the framing, therefore, giving it the appearance that I never moved side to side. This opened up a great opportunity to change and fine tune my shadow choreography and try again.

Costume

Somewhere in between the first and second filming attempts, I changed my costume; it was then that the theme and meaning of my thesis began to fall into place. My very first honors project I presented was a dance to *Dead in the Water* by Ellie Goulding. This dance was heart wrenching. Despite being on the dance team, I had not truly danced all semester, and I struggled with this. I remember sitting in my car in the Lucille Clement parking lot completely inconsolable listening to this song and choreographing it in my head. I chose to dance in this floor-length scarlet skirt that was split up the sides. The skirt stood for the water I was drowning in that first semester of college. To this day, this was my favorite dance I have ever choreographed, and the only dance I do not have on film. I was so excited to present it to my fellow Fine and Performing Arts Honors students because at this point, I had only talked about being a dancer, but neither my peers nor my professors had seen me dance. In the midst of the excitement and nerves, I forgot to ask someone to record the piece. The only reminder of this dance I have is the skirt and a partial video in ETSU's Center of Physical Activity's studio. I still think back to the feeling this dance gave me, and how I had to hold back the tears at the end during questions and answers because it just felt so good to truly dance for myself again. After this performance, I knew I had made my point. I am a dancer. It is my life, and I will never let it go. Furthermore, this would not be my last red

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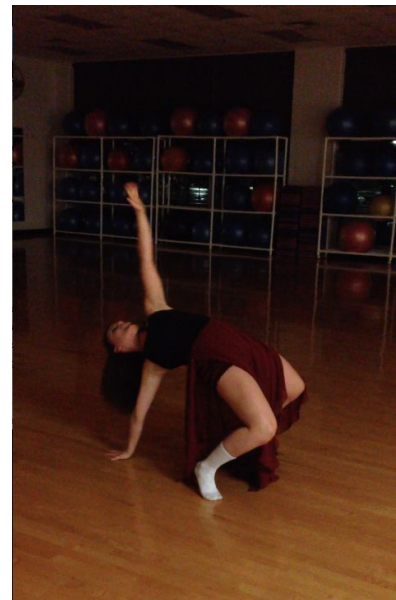
skirt honors performance. In fact, I have danced in something red for every FPA project I have presented.

Second semester freshman year, I thought a floor length dress was cool, so why not a skirt with a fifteen-foot long train.

My sophomore year we had a collaborative project about food and fashion. This was my first experience with choreographing a duet with only having myself, and then animating it both 2D and 3D with Matthew Drury, my mentor and project lead. The main character of this piece wore a red skirt and I wore a red dress on presentation day to match her. Junior year, through another collaborative project about heroes, I did a dance in a field with a handmade red heroine inspired top.

One day, while re-choreographing after the first film day, I noticed I was not happy with the piece because it was missing something, and the scarlet skirt from freshman year was the answer. It was perfect. It moved like the water I originally desired, and it was sentimental enough to give the emotional effort I was looking for while dancing. And like the perfect bookend to my Honors College years, *A Scarlet Ending* was created.

Re-Choreographing and Filming

Now that my vision had become clearer, I set out to revise my choreography to be more scarlet skirt friendly. When creating the new movement for the shadow, I used my animation skills to always create a clear silhouette. I played around with how the usage of the skirt disturbed the clarity of my movement. In just a split second I would go from a clear figure to a black blob or a square or something organic. I loved this, it was a whole new level of
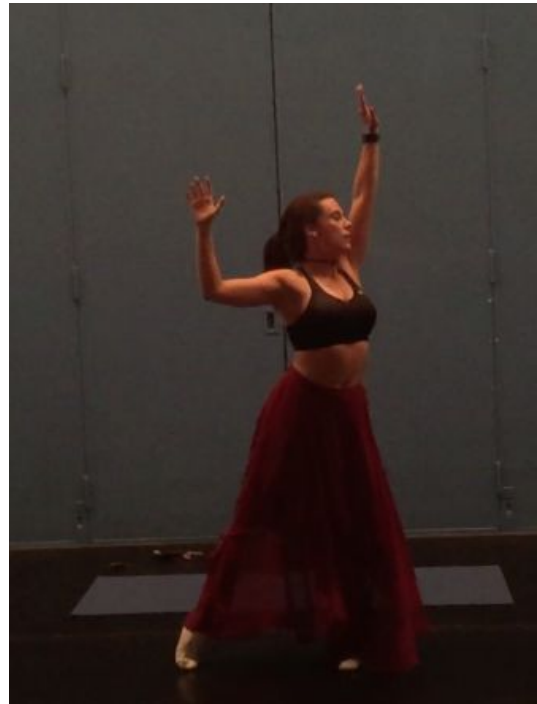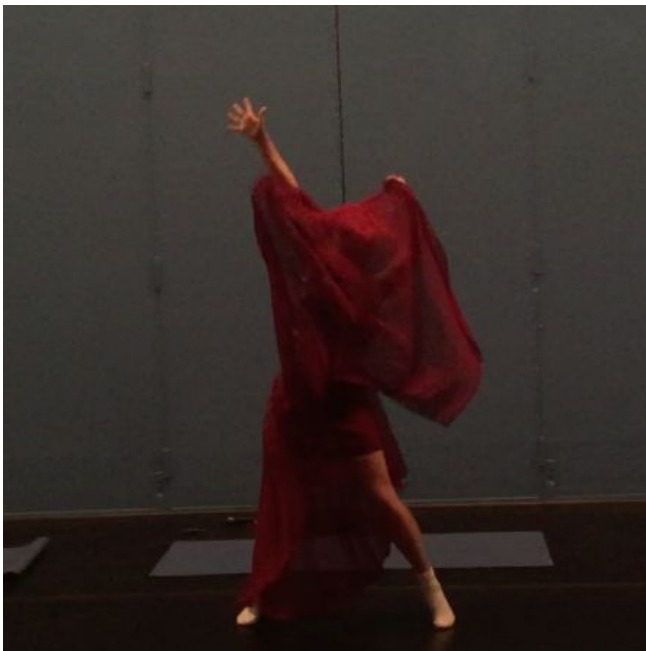
choreographing I had never had access to. Much like freshman year, the skirt represents the water of life that I am drowning in. The only difference is this time I know how to use it to my advantage. Through the years, I have learned that this is exactly how I want my life to be: full of projects, assignments, performances, games, events, dances, and much more. As senior year comes to a close, I have found I do not regret any of it, not even the suffocating water. Through this dance I am showing myself that what scared me freshman year is now my muse for performance. Without the chaos, I would not need the stress relief of a good dance. You could say I am a tortured artist for needing chaos to create my desired art.

Now that I had a clear purpose for my movement I could focus on the technicalities

necessary to successfully film my shadow footage. After studying the first round of shadow

footage, I noticed a couple requirements I would need to fill. One, I needed to dance specifically within the dimensions of each frame and travel the exact distance between each frame to eliminate the sliding of the footage in post production. Second, I needed a partner. If I

wanted my shadow to look like I was partnering with someone or actually applying resistance against the wall, I needed a person to be there in the video with me. To solve my first problem of dancing within the dimensions, each time I practiced, I used yoga mats to measure out the width of my frames and the distance between frames so I could practice the muscle memory of moving in such precise locations. This was extremely helpful when I got back to Strategic Placement Group to film the second time. I took green tape and taped

the carpet in front of the green screen so I could see my boxes, and it also helped that I had practiced so precisely that my body moved exactly where it needed. Now, I had to solve the invisible partnering problem. A great friend, and fellow FPA member Rachel Crabtree, so graciously dressed in a green morph suit and followed me

throughout dance. Her eerie presence became my wall when I needed her. This helped sell

the look that I was actually trapped in the frames. Without Rachel, I looked like a boundless mess. Needless to say, the second round of filming went very well! With the help of

David Hirsh filming and Rachel dancing, the whole shoot ran smoothly and we left having all the material needed to complete my project. Now that all the pieces were completed, it was time for digital editing.

3-D Layout

At the beginning of this project, I knew exactly what I wanted, but had not yet acquired the requisite digital media knowledge to make the project work. Thankfully, Ryan Thally was willing to teach me the process of projection mapping[3]. Throughout the whole preparation process, he would give advice on how to film the dance, how to build the frames, and what to do on show day. After we acquired the footage, Ryan and I worked on the template for the projectors. Since I had five disconnected frames for my video content, the projectors needed a template to help them know which screen would be showing

[3] *Projection Mapping*-When light is mapped onto any surface

content. Due to changes in the projector's frame sizes, this process also took multiple tries. In Audtodesk Maya, we started this process by building a 3D scene of the exact dimensions of the frames, stage, and seats. Of the five frames, one was placed dead center and on either side of the center one, two more frames sat at their perspective 30 degree angles off the side of the center one while coming down stage. After making an exact 3D replica of the layout of my project, we placed a 3D camera in the Maya scene at the approximate eye level height of the average person sitting down. This helped take out any chance of the projectors warping the footage on show day. However, this was just the first step. We then had to UV[4] the screens so the applied texture would be seen properly. Each screen then had a different colored number, so that when we set up on tech day, we knew the projectors were lined up properly, the projectors are projecting onto the correct monitor, and the footage would be contained inside their correct frame. We then took the exported FBX file from Maya and into Nuke. In Nuke, we set our scene up for a scanline render[5]. This gave us a flat 2D image of the 3D textured model that did not show the 30 degree angle in the frame. However, the first attempt proved unsuccessful. We then took the FBX file from Maya and into Cinema 4D to apply a new 3D camera which then solved our Nuke problems. After two days of working in circles between these three programs, we finally had a proper template that could then be used in After Effects to aline the footage to be inside the frames.

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[4] *UV-* UVs (pronounced U-VEEZ) are two-dimensional texture coordinates that reside with the vertex component information for polygonal and subdivision surface meshes.
[5] Scanline Render- ScanlineRender, sends the results of your 3D scene back into your composite as a 2D image.
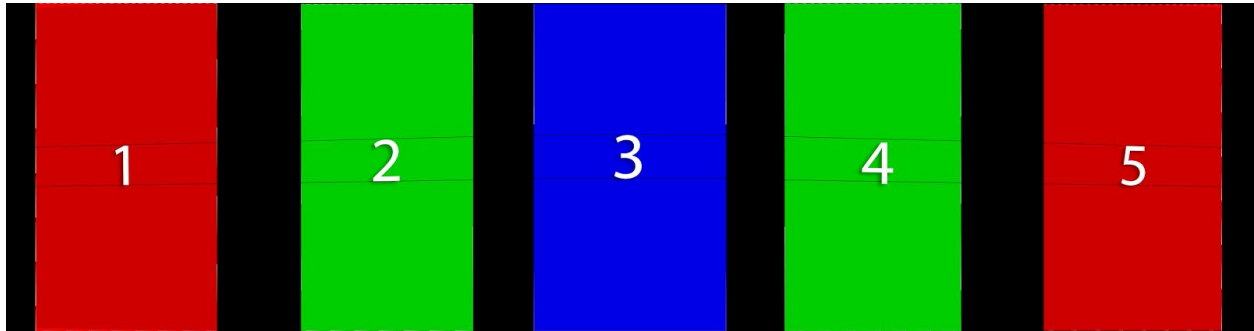
Editing

Next, I edited the video into my shadow. Using After Effects Keylight, I took out most of the green. However because the skirt is sheer, some of the skirt disappeared along with the green screen. The final solution to this process was to animate a 2-D black blob to fill in where the skirt vanished. This process was the most time consuming, but after all the sections were turned into shadows it was time to compile the footage into one video that fit into the layout made in Maya. This was when the vision finally started coming to life. Because I planned out the choreography so precisely, setting the shadows in the frames was not complicated. I then had to focus on the transitions from frame to frame. For instance, some transitions were natural. With others, the shadow fell through the bottom or rose from the bottom to the top. Lastly, the shadow dissolved into dust and appeared as dust in the next frame. The use of Trapcode Form took my thesis from merely interesting to entirely professional. This added another element of surprise within the piece. After weeks of tweaking, I finished the final edit only two hours before the show.

Setting Up

April 23rd was set up day. It took us six hours to finish wrapping the frames in white plastic party tablecloths and hang them from the battens. At the end of the day when we sat back in the house to see

our work, my breath was stolen by the reality of our efforts. For so long it was just

an idea, but to actually see my hand built

work hanging in the theater helped me see this

plan would actually succeed.

Technical Day

The next day was our tech day. This

day was fully focused on getting the projections lined up and working. Ryan ran

cables, set up projectors and music while David assisted him. Meanwhile, I was

getting used to dancing with the screens. I had to rearrange some of my steps and

placement, but we all finally finished and it was time to run the rehearsal. Through

this, we discovered a minimal alteration to the lighting was necessary, but other

than that, everything was ready for the show.

The Performance

       The day had finally arrived. I was going to see my ideas truly come to life. Livingston, my thesis advisor, and I worked all afternoon to fix some technical errors and make the title screen logo. Everything finally finished rendering and exporting at 5:00pm and the performance was at 7:30. I was stressed about the time crunch, but it could not have worked out more perfectly. David and I arrived with plenty of time to fix the lighting and for me to stretch, and Ryan arrived with the perfect amount of time to get everything set up back-stage. Before I knew it, the curtains were rolling back and the house lights went dark. I could not believe my idea had worked; I was about to perform the exact thesis I had been dreaming of. And then the music came on. I felt right at home. The last time I danced on the Northeast State Community College WRCPA stage was my high school senior recital, and now I was performing my college undergraduate thesis. It felt like a dream. Dancing was effortless, and all the turns and jumps I worked so hard to perfect came so naturally that day. I left all I had on that stage and have nothing to regret. I could not stop smiling once it was over, and just wanted to do it again. But that is the beauty of dancing, it cannot be perfectly redone no matter how hard you train. You

have one chance. And I believe that is some of the beauty of my thesis. Yes, I have a video, but only those who were there will understand the real performance.

<u>Conclusion</u>

I believe my thesis was a success. Throughout the year it had changed more times than I could count, but in the end, I could not imagine it being anything else. It had a deep meaning to me and my college career, and how I have evolved through the Fine and Performing Arts Honors Program here at East Tennessee State University. It truly challenged me as a choreographer to learn how to choreograph for something more than a normal performance. Rather than just dancing to music with no props or digital work, I wanted to bring both of those elements into my piece. I learned how to build frames, make a canvas out of tablecloth, and hang them using stage rigging. I learned the processes of projection mapping and all the detailed planning that goes into it. I learned how to edit video into my shadow and then into dust and much more. I feel very satisfied with the result of *A Scarlet Ending*. As a freshman in college, I found it daunting to have to do a thesis, and now that it is over, I could not think of a more perfect way to finish out the year.

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