

Berklee College of Music

Woman of War
Scoring to Captain Marvel

Submitted in Partial Fulfillment of the Degree of
Master in Music in Scoring for Film, TV, and Videogames

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Abstract

Woman of War is a final project that sought to reflect my challenges, dreams, as well as establishing a sense of who I am as a composer. As an indecisive individual whom grew from two different cultures, (American and Chinese) I wanted to find a piece that truly identifies who I was. The project is a reflection of what I have learned from Berklee College of Music in mixture with my childhood dreams of being able to write for Superheroes in the near future. This thesis explains my entire process from inspiration, to theme, and finally to screen. In addition, I included an analysis on the similarities between my source of inspiration, how the music reflects through film, and an layered orchestration analysis.

Keywords: Composition, Film Scoring, Themes, Identity, Dreams, Orchestration.

Acknowledgements

I am extremely gracious to all those whom have supported my goals whether it is: teaching me to learn the skills necessary to succeed, supporting my goals financially, making me laugh when it seems as if all hope is lost (Joe) or even those who wish to support me in spirit.

I would like to graciously thank my professors (Lucio Godoy, Sergio Lacima, Vincente Ortiz Gimeno, Pablo Schuller, and Alfons Conde) for their patience, time, and help in order for me to succeed. Thank you Lucio for always being an open source of understanding and for that, I feel like I can confide in you with anything good or bad and you can offer great advice.

Sergio, thank you for your compositional and orchestral advice, I learned so much about orchestration and transcription and your conducting class really pushed me to become a better transcriber as well as sight-reader. I look up to your work as a conductor and now forevermore, I have a tendency to conduct almost every time I listen to a piece with the score.

Thank you Vincente for answering my endless questions during direct studies and your willingness to give great mockup advice. I hope to be as lucky as you to go to LA for a week and get a job.

Thank you Pablo for your outstanding patience with my mixing and learning. I have learned a great deal from you about mixing and (even though my ears are not the best) I will continue to practice so that perhaps I can own my own home studio.

I also want to say thank you for my colleagues for your help, even though I am a GA, I learn so much more from talking to you from sharing a conversation with coffee, to sharing each other's works at the lab. All of you are very talented in different ways, I have no doubt that you will succeed in wherever you may end up doing. Thanks Laura for checking and constantly making me a better composer (Eres mi buena amiga).

Captain Marvel is known as one of the first top-grossing, big budget film by a female composer Pinar Toprak.¹ Her story paved a way for young composers like myself to dream high regardless of how or what I may identify. I would like to strongly acknowledge and thank Pinar for her efforts to accomplish her dreams so that others (like myself) may follow.

Thank you to my wonderful partner-in-crime (not really), Joyce for supporting me when I need it, being there when I need it most, and making me feel better when I feel down. Thank you Marcela for being a friend when I need one, someone to laugh with when I need it, I know you might be worried about the next year to come, but I know that whatever you may end up doing, you will continue to exceed expectations beyond measure.

Also, I want to thank the librarians (Sol Vargas and Tsun-Ju Lin) for being so supportive and informative especially in my exploration in new editions and new books to add to the library.

1. Burlingame, J. "Another Record for 'Captain Marvel': It's the Top-Grossing Movie Scored by a Woman." *Captain Marvel Composer Pinar Toprak Top Grossing Movie Scored by a Woman*. <https://variety.com/2019/film/news/captain-marvel-composer-pinar-toprak-top-grossing-movie-scored-by-woman-1203159811/> (retrieved 19 Jun. 2019).

1. Introduction

As a classically trained musician in the conservatory life of composition, I wanted to branch myself further into the film industry because I did not find much joy in writing for the concert setting. The compositional niche I realized did not reach a very large audience, and the support for living composers in the concert settings was centered around academia. After I attended the *Palomar Film Scoring Workshop*, I felt like writing music to a multitude of other media *enhanced* the audiences understanding of the environment in conjunction with the music.

Because of this fascination and the lack of experience in this area thereof, I decided to approach this CE project differently than most of my usual assignments. Meaning, I started writing with the mockup first, and then notation second. I really wanted to start writing in a way where I was able to practice un-learning my classical background in order to expand my horizons to something different. Although I may or may not start this way in the future, I want to be open to the possibility that I can focus purely on the absolute music and not so much on the little notational details.

I am a HUGE superhero fanatic and because of that, I have always wanted to write large orchestral arrangements with themes that demonstrate a certain character resembling empowerment. Part of why I became a huge superhero fan, was because of my absence of control in my life. As someone who was adopted from China due to the one-child-policy, I felt a majority of my life was based on my worth. Therefore, I was always constantly doing something productive to makeup for the lack thereof in order to prove that I was worth something to someone or somebody. Perhaps this explains my workaholic tendencies, my

difficulties in relaxing, but now in this CE project, I wanted to focus on what I wanted to do and do this for me, and nobody else. As I am writing this introduction now, this feeling still gives me the shivers as I am not accustomed to putting my wants above others.

2. CE Selections:

After many e-mails to my director contacts over winter break, the first selection I wanted to use was for my C.E. was for a Dungeons and Dragons webinar series for LiquidLuck Productions. Before I came to Berklee, I managed to network with the lead producers of this production company in Denver. However, there were a few issues which came with this project (Please see issues pg. 24).

As an emergency alternative, I found a chicken animation that I wanted to re-sound design and score for over spring break.² It was, in Alfons Conde's words "Perfect" in the ways that it was exactly three minutes long (which fit the maximum C.E. length). I started writing to this film with the intent of trying to make the music sound Disney-like. After a score reduction, temp track, and many score analysis, I realized that this film did not require many instruments. As it is a cartoon-like comedy, the whole film could be done with a simple woodwind quartet. When I started writing, Conde commented that it harmonically did not make much sense. Either way, I gave up on this scene because I felt I would not be able to fully utilize the fifty-one full orchestra in Air Studios for my final project.

Finally, the last C.E. which was brought to my attention by my colleague Cordane Richardson, was Captain Marvel. As I scoured through the entire movie looking for a three minute scene with few dialogues and the need for dramatic music, I eventually found my C.E. during the scene when Captain Marvel swoops up to defend earth from an alien species with a foreign nuclear missile. In the film, there were many examples of the heroic Captain Marvel rising above the challenges and standing up to what she knew was morally

² TheCGBros, "CGI 3D Animated Short "Scrambled" - by Rubberbrain | TheCGBros," YouTube, September 20, 2016, accessed June 23, 2019, <https://www.youtube.com/watch?v=wDDF0pWYo8Q&t=3s>.

right. What attracted me to this scene was that it was constantly building like bricks one on top of the other. Therefore it was a challenge to the composer musically to accommodate these building blocks with small changes and to convey and repeat the theme in a multitude of ways without losing the attention of the listener.

3. Composition: Woman of War

The Cue “Woman of War” was actually chosen by a quote from Captain Marvel.

Previously, I had a temporary placeholder “Reaching for the Stars” which I found to be too clichés. The quote from the comic book goes:

My name is Captain Marvel... I am an Earthling and an Avenger. But today I stand as one with the settlers of Torfa, who clam this planet and its resources as they were freely given in the aftermath of the Behemoth disaster... They are a peaceful people, but I am a woman of war. If you move against them, you move against me. I am willing to die here today, for this cause. I have made my choice... Now you make yours.³

I used this quote in the title of the score along with a visual. I felt it gave more context to the character in writing than just the music itself.

As mentioned in my introduction, this was the first time that I started by D.A.W. (Digital Audio Interface) instead of writing by hand with my conservatory training. This method opened my mind a bit more, but also complicated my notation more than I had anticipated (See Issues pg. 24). Despite these issues, I did come up with probably my best mockup that I have made thus far with a score (See Appendix A).

3.1 Sources of Inspiration

What influenced my first draft was first Rupert Gregson William’s Score for *Wonder Woman*.⁴ Although I did not intentionally mimic this arrangement, (as it was meant to be a reference) there are a numerous amount of coincidental similarities.

³ Moore, Alan, *Earth 616*, UK, Captain Marvel, (Earth 616)

⁴ Orchestra, Alfred Music. “Wonder Woman, Arr. Victor López – Score & Sound.” *YouTube*, YouTube, 30 Apr. 2018, www.youtube.com/watch?v=CcYG4RBdKNI.

3.2 Similarity #1: Rising Ostinato with Melody

The staccato texture in measure 22 in the woodwinds and violas reflected the ostinato on top of the long melodic brass line reflect similarly to my piece. Like William's Wonder Woman, his cue is a piece which continues to build (see figure 1).



Figure 1. Wonder Woman composed by Rupert Gregson Williams Arr. Victor Lopez (m. 1-8)⁵



Figure 2. Captain Marvel Rescore Version 9 Revision 5: Woodwinds (m. 14-16)⁶

However, instead of having the a single woodwind player repeat the 8th note pattern, I exchanged the one measure ostinato between many instruments in order to let each of the performers breathe and expand my orchestral color palette. I intentionally let the performer continue one note into the next measure in order to create continuity between the instruments instead of creating a sudden change between different

⁵ Orchestra, Alfred Music. "Wonder Woman, Arr. Victor López – Score & Sound." *YouTube*, YouTube, 30 Apr. 2018, www.youtube.com/watch?v=CcYG4RBdKNI.

⁶ Ibid

instruments. As I am a visual learner, I think about this effect like a sine wave vs. a square wave (See Figure 3.)

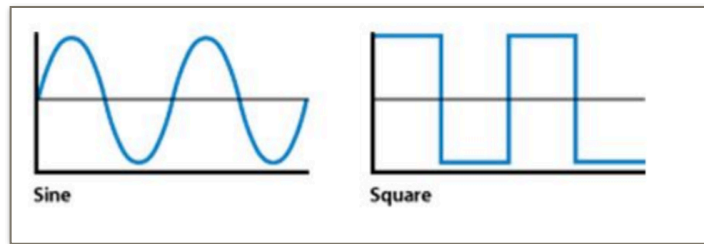


Figure 3: Sine vs. Square Wave Visual⁷

3.3 Similarity #2: Rhythmic Ostinato

Another similarity would be the percussive example in measure 56 with the rhythmic ostinato in the strings (Appendix C). The main differences between the ostinati's would be the time signatures changes in William's Score between 3/4 to 4/4 while I maintained the 4/4 throughout. Next, my ostinato is four bars while William's Wonder Woman contains two.

3.4 Similarity #3: Growing Motif

The next resemblance I would like to mention is the growing motif in William's cue (below) as well as mine (pg 12). Another unusual coincidence is that we both doubled the Strings and Horns on this particular motif. In page 12, each repetition of the motif is:



Figure 4: William's Growing Motif: Measure 96-103

⁷ Shareef, Umar. "Zelect." Home Appliance, Electronics Selectors, Buying Guides in India. January 09, 2017. Accessed June 23, 2019. <http://www.zelect.in/inverter/square-wave-inverter-vs-sine-wave-inverter>.

4. Film Analysis

4.1 Visuals Corresponding to Music

The first two seconds appear as an immediate swoosh as Captain Marvel flies through the air. In order to accommodate those “swoosh” moments before the change to a new area, I wrote a very quick run in the orchestra to not only depict the visuals in a diagetic manner but also in a musical sense as well.

When Captain Marvel first appears (below), the first two notes of the Captain Marvel theme appear as well as she abruptly turns to realize that the aliens have come to invade.

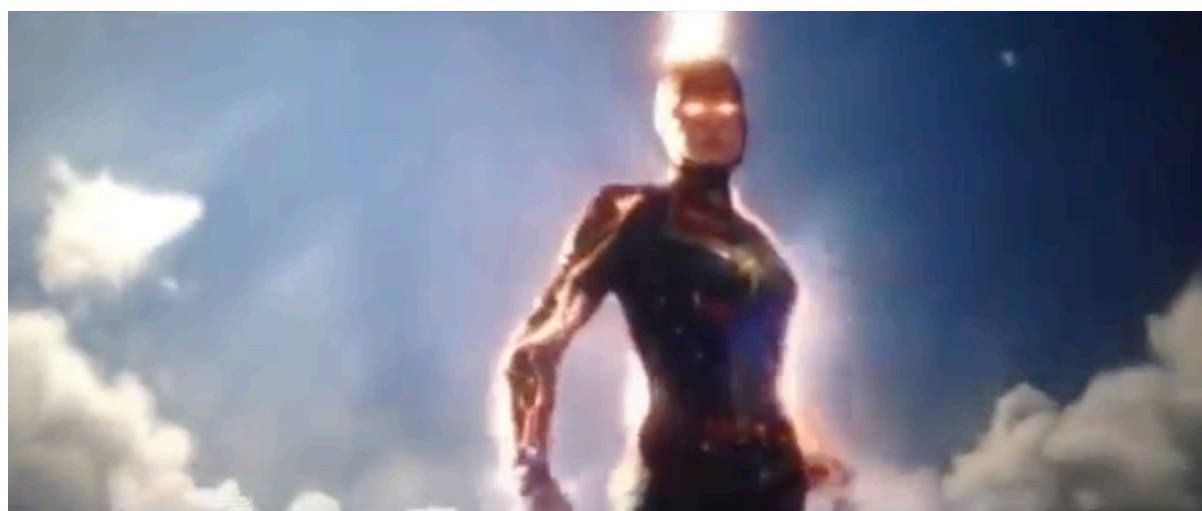


Figure 6: Captain Marvel: (0:20)⁸

Figure 7: Swoosh Run Figure (m.1) as indicated (left)

⁸ *Captain Marvel*. Directed by Anna Boden and Ryan Fleck. Performed by Brie Larson. *Captain Marvel*.

As the alien ships appear in a flickering ball of light, the snare comes in with the string ostinato. The snare, is intentionally military-like as demonstrated by an example below.

Army Military Marching Beat




Figure 8: Army Beat Example: Online Drummer⁹

I particularly chose this mood to not only represent the war-like battle between Captain Marvel and the aliens, but also to reflect on Captain Marvel’s background alias Carol Danvers. Carol Danvers (or Captain Marvel) is in the US Air Force. Although it is a bit of an old fashioned musical cliché to reflect, it does work when put in the right epic context such as film score.



Figure 9: Captain Marvel (m. 14-16)

The next part of the musical score alongside the film, would be the sense of hopelessness when the alien race shoots the (what I think is) nuclear bombs to destroy

⁹ Brown, Nate “Online Drummer: Army Military Marching Beat”, 2008.

earth. The tempo musically maintains consistent, but the rhythm of the notes are augmented to make the listener seem like the music is slowing down. I also purposefully chose this moment to make the viewer seem like time is slowing down.



Figure 10: Captain Marvel 0:49¹⁰

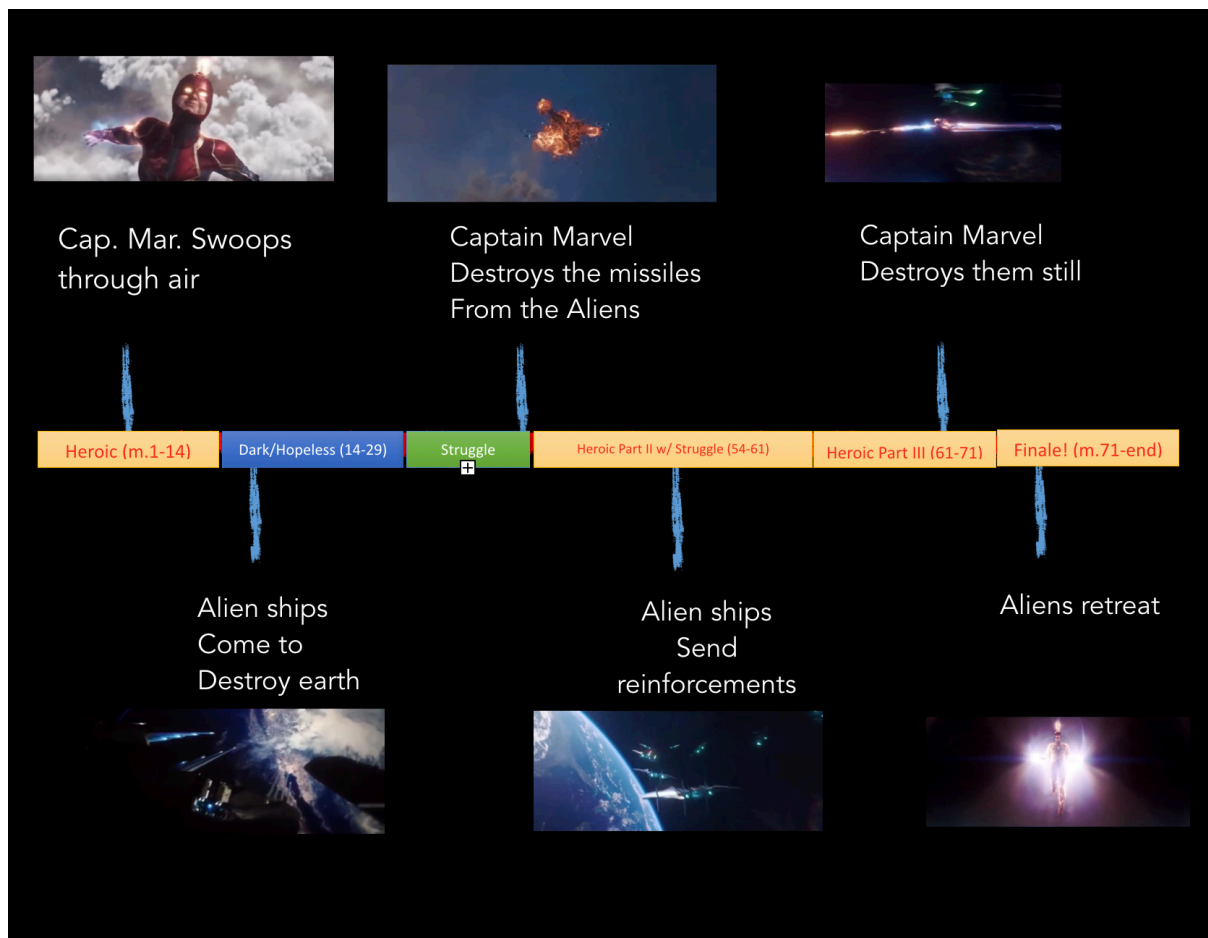
As it seems all hope is lost, there is a stream that appears in the sky which is Captain Marvel rising to defend Earth. The taiko comes in when this stream appears and the growing motif (as mentioned previously) comes out of the String and Brass section to emulate the struggle Captain Marvel has to push the bomb towards the enemies in mid-air. As the single bomb knocks the others into a dramatic explosion, Captain Marvel flies once more with the musical swoosh through the fire and flames without a scratch.

The theme of Captain Marvel appears in the horns (See Figure 11 Below):



features a melodic iteration of the theme. As Brie Larson (Captain Marvel) smashes through the spaceships with her bare hands, the heroic Captain Marvel grows along with more orchestration till she smashes through one of the larger alien ships to a 6/8 section.

Finally, the musical swoosh comes back in a grand finale with a monophonic tutti as she uses her power to explode in a big ball of light. This is represented in the presented timeline below:



Timeline 1: Brief Scene with Emotional Musical Analysis

5. Edits/Drafts/Revisions

5.1 Version I

My first version of Captain Marvel took the most time. As mentioned previously, I worked from DAW to Sibelius, mockup to notation; but the main issue for me as the classical composer was: this was not *my* process. One of the main benefits of writing the mockup was to be focused purely on absolute music in the means of not being obsessed with the theoretical aspect. However, there were a series of issues in this draft because I tried to make it sound bigger and doubled many instruments in unison in order to maintain a “big Hollywood” sound (See Appendix B).

5.2 Version II

After meeting with Alfons during direct study, there were sections which appeared as 5/8 and even 7/8 which concerned him. He told me to change these immediately to a simple meter such as 3/4 and 4/4. At first, I was a little hesitant, but then I proceeded to think about the overall piece. I thought that I would just like the greatest possible outcome of this eighteen minute recording, so I reflected his change.

In the second version of the score, there were various moments of unusual sharps that I changed in this piece. The G# was quite a prominent error throughout the cue but was changed in a latter version. Since the 7/8 was then transformed later to a 4/4, Alfons also suggested that it would be in my best interest to make the section only with eight notes and eight-note rests in order to avoid confusion in the orchestra (See Appendix D).

The next change, would be make the runs easier. This also was brought up once more in the third version but in a different context.

5.3 Version III

The next revision was the final direct study. Alfons mentioned that the run should lead up to the B instead of going from the A to the B. When I thought about the run and how it is meant to fluctuate as a scale from one note to another, I could see where he was coming from. I also made the runs a bit easier on the orchestra instead of ten tuplets to a simple straight sixteenth notes. Unfortunately, I didn't have as much time during this section as I did in previous revisions, but I was able to get Sergio's input during my conducting practice (See Appendix E).

5.4 Version IV

During my time conducting in office hours with Sergio, he was able to distinguish that the mockup was different than the notation. This was somewhat intentional as I felt as if the piece constantly needed more revisions particularly within the realm of arrangement and orchestration, and I did not want to continue to write many mockups for each revision until it is finalized.

Sergio responded to my piece as it being hard to read and too many divisions in the strings. Therefore in the next updated cue, I eliminated the two staves and moved them all into one. There was still some division, but it definitely was not divided into four different violin I's. As per Sergio's comment, I turned to my good friend Laura for advice.

5.5 Version V

Laura looked over the score, and she also agreed with Sergio's comment about the score being too hard to read. She recommended I "duck tail" or move around the melody in the woodwinds so that they would have time to breathe. In addition, the main comment to which she mentioned in this revision was "Less is more" or "simple is better". She also

recommended that the unison should not be performed by all the performers and that doubling more than one instrument does not always mean a bigger sound.

I took these thoughts and rearranged the entire score once more and talked to her the next day in order to see if I followed her instructions. During this period of last minute rearrangement (as the deadline was the next day for all projects), I quickly rushed and worked all day at the lab once more to strive for the final push before the deadline. This final version ended up being the last and final draft for my C.E. This was about the time period where I found my finalized title "Woman of War".

6. Layered Orchestration Analysis

As per the layered concept of foreground, middle, and background, I would say that the final version contained more brass in the foreground, strings in the middle, and the woodwinds in the background (See Table 1).

Table 1: Layered Analysis

Rehearsal Letter	Layered Orchestral Analysis		
	Foreground	Middle	Background
A -> B	Horns (m. 2-9)	Strings (m.2-9)	Woodwinds (m.2-9)
B -> C	Horns (m. 11-13)	Trumpets (m.11-13)	Tuba (m.11-13)
C -> D	Woodwinds (m. 14-22)	Strings (m. 14-22)	n/a
D-> E	Horns (m. 22-19)	Strings (m. 22-29)	WW (m. 22-29)
E -> F	Horns (m. 30-44)	Strings (m. 30-44)	WW (m. 30-44)
F -> G	Horns (m.44-53)	Strings (m.44-53)	n/a
G -> H	Horns (54-70)	Strings (m.54-70)	WW (m. 54-70)
H -> I	Strings (71-74) Woodwinds (74-77)	Strings (m.75-77)	n/a
I -> End	Woodwinds, Brass (m. 83-end) Strings are added (m. 91-end)	Strings (m.83-91)	n/a

I primarily wanted to focus on having the brass or the Horn section as being the prominent area of melody because it is a super heroic scene and the cliché of a Horn playing the melody works in this context. Since staccatos are well used in the Woodwinds, strings are better in runs, I decided to use these families as more of my middle and background to complement the melodic content in the brass.

Although there were moments where I felt the melody needed a more softer touch, I sometimes doubled the strings with the brass in order to create a softer timbre mixture between the two.

7. Recording

During the recording process, I was completely nervous. Because of all the versions as well as changes arrangement-wise changes, I was checking everything many times. I entered a strong score-paranoia where I was constantly trying to fix whatever I could before the recording time.

Because I was so obsessed and focused on the score, I failed to notice that the click was playing in quarters instead of dotted quarters in the 6/8 measure in measure 71 in letter H. This was also mentioned in the recording notes from Air Studios (below).

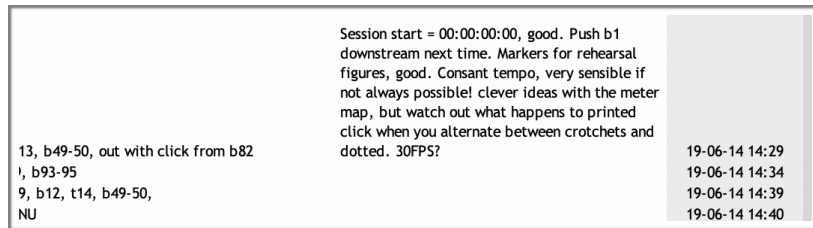


Figure 12: Recording Notes from Air Studios

During the 5/8 measure, it was recommended that instead of having all five clicks of the measure that I have only: quarter (2) + eighth (1) + quarter (2). I think even though I told the players in advance, this change was still too difficult for them. This was changed in the eighteen minutes to be divided into eighths. One brief issue that I realized with the sus-cymbal is that I had the percussionist was playing the full two bars instead of just ending on one and letting ring. This was changed by the percussionist on the second time around.

When I re-read my score once more, I then saw the confusion (Figure 13).

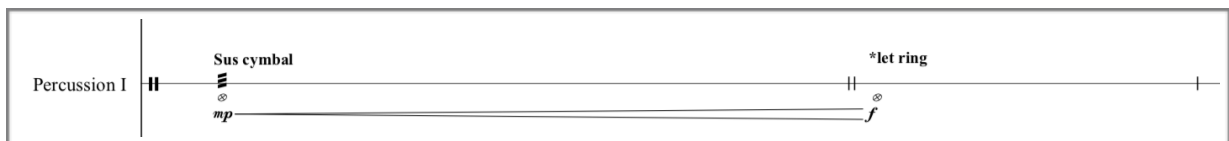


Figure 13: Captain Marvel (m.1) Percussion

I realized that it was because the whole note in bar two that was present, therefore it was easily mistaken that he would play through the whole two bars instead of letting ring on the second. I now know for future to end on the second bar in a quarter note with a slur and a note that says "let ring" to avoid this confusion.

There were quite a bit of questions in the end which I should have mentioned to the orchestra first. I think I was just so nervous that I might have just forgotten. The ending is on a fermata being the largest note I should have mentioned. The intent was not to end on that measure, but for the orchestra to watch me to cut them off in the end. This did not happen the first take however for obvious reasons.

Before I went up on the podium, I had a big plan where I would focus on in the orchestra, particularly in the 7/8 against the melodic 4/4. But in an instant, this fifty-one piece orchestra's eight notes was already so tight by the first take. I was stumped in a way, I thought we would have more to work on but there weren't any major issues that I found. Even if there were issues, as the one of the younger composers in the room, I would have felt awkward telling a professional musician how to "do their job".

I was also terrified to work with the first time with large industry professionals. I was also unaware that Jill (the score preparation professional for Hans Zimmer) would be in attendance. I was scared to have my parts being read by the main score preparation. All I could think in my head was: "I am not worthy!" But of course I kept my mouth shut and let her decide for herself. For the first time in a recording session this year at Berklee, all of us had absolutely zero complaints.

After the sessions, the players mentioned all the issues that they encountered with our pieces. The flautist was enthusiastic to mention the instrument changes... no surprise

there! They also mentioned to have a plan before the recording and to not be so shy to get what you want out of your music. Air Studios also provided all of the students with notes as well as a microphone list (see Appendix D) and a list of all the performers (Appendix E). Overall, I think the session went better than expected, and I gained a lot of experience as well as growth working and composing in a professional environment.

8. Issues/Challenges:

The first issue with the project about the Dungeons and Dragons project, was that they haven't shot it yet. Even though they added temp tracks to the project and will edit to my music, I needed visuals in order to complete my final C.E. I unfortunately never received the footage till this day and I guess in this case I am glad I found another project to substitute.

The difficulty of working from a MIDI to a notation software is that the music looks like a new foreign dialect with a lot of black ink on paper. For two days, I practically lived in the lab in order to clean up this notation as best as possible with the "clean up" section in Sibelius X. But I could only "fix" each section two bars at a time. This was a disaster! Even though all of what I had was quantized, many of the musical notes did not look professional. I felt like I created a big mess without intending on it to happen. Many other composers did the notation first which was unusual for them. But I cannot even imagine how anyone can work with the mockup first and then move to notation. Just looking at bad musical grammar in general made my head hurt. The classical voice in my head was screaming for breaks from all the black ink which laid on the page. This is probably why the first draft took the most time than the others.

Despite all these difficulties, I learned what I can or cannot do or tolerate. Furthermore, I will keep these lessons in mind as I proceed to the future and hope that I do not repeat them.

9. Sound Design

In the post production stages, I listened to the reference film¹¹ and I felt as though the sounds that they had were not quite as cinematic and large as they could be, particularly the explosions. Another aspect in the sound design section would be the “alien tech” I felt as if the sounds for the alien tech could sound a little more foreign to the earthling ear. I described this to the sound designer who needed more examples for her sound design reel.

In the sound design stages, I wanted to be sure that the “good side” sounds were transposed a little higher than the “bad guy” sounds. During this process, I worked alongside my sound-designer Joyce within Ableton (a D.A.W. that I have not used before) to create many sounds. In order to create these unusual sounds, we layered many different sounds on top of one another keeping in mind the high, mid and low end.

During this process, we created a few sounds that we re-used frequently. Primarily, the sound for Captain Marvel’s “boost” of energy when she flies faster, her pulsating energy, and her lazer beams that she shoots with her arms. In order to create her “boost” sound, we used: a lazer-beam sound, transposed growl, and a swoosh in order to create this effect. For a pulsating energy (as energy in the film is being radiated off her) she synthesized a pulsating synth. Finally with her lazer beams, I combined the lazer sound with an explosion to make the sound have more impact.

The difficulty, however, in this section, was to create sounds to distinguish between the evil and the good. Both sides used similar alien technology, but Captain Marvel repurposed that technology towards good. To create this distinction, I chose to make the

¹¹ Captain Marvel. Directed by Anna Boden and Ryan Fleck. Performed by Brie Larson. Captain Marvel.

sounds more lower in transposition when the bad side uses this technology. When the good side approaches, I use the same sounds but transposed to a higher pitch to make the sound "brighter".

The two timing devices that I learned in this sound design process were impacts, and shots. Explosions or punches, were timed based on impact, meaning you time the sounds to when they happen. However, with lazer beam sections I noticed that each sound was late using this method. As soon as I saw the first frame of the "bullet" or flow of energy in Captain Marvel's case, I added the sound in this place to make the shot on time.

Learning Ableton was a new challenge in and of itself, but I benefited highly from learning the transpose, gain stage, and crossfade in this software. If I were to do this kind of audio manipulation in pro tools, it would have taken more time to process and find the correct plug-in to do the same manipulation I did in Ableton instead of just clicking on the clip and moving a fader or a knob. Learning the timing and distinguishing the "good" from the "bad" the impact or shot improved my sound design knowledge highly.

10. Dialogue

As mentioned previously, I did not have much dialogue which was intentional because I wanted to purely focus on the music. There are a few lines however, that I needed to record as per (See table 2 Below).

Table 2: Dialogue

Time (approx)	Name	Line
00:20	Nick Fury	What the hell was that?
00:24	Ronan	Deploy Ballistic Warheads
00:34	Other Bad Guy	Thats Impossible
00:35	Ronan	C3 Doesn't have a defense system advanced enough to defend itself
00:48	Ronan	Take her Down
1:02	Captain Marvel	Ugh
1:07	Captain Marvel	Woo
2:01	Ronan	Return to the jump point, we will be back for the weapon.... The woman

For this section, I also was the role of a voice director. For the cast, I remembered my fellow colleagues as well as the ones that I talked to as a GA at the lab to create a cast list (Table 3 on pg. 31).

Table 3: Voice-Over Actors

Character	Name
Nick Fury	Stephen Baynes
Ronan	Simon Tomas
Other Bad Guy	Joe Pietro
Captain Marvel	Elena Diaz Mateo

After meeting with Pablo, I realized that the best way to mix dialogue with film is to keep the sound dry, compress, and keep the total mix under -14 Dbs. I applied this dialogue mixing technique to my final mix but now on three separate busses: Dialogue, Music, and Sound Effects.

11. Mixing

In an unusual way, the mixing was much simpler than usual. Since the room was so well treated, I did not have very much mixing to do. During the mixing process I felt that all I needed to add was EQ on the submixes and automate the volume. However, the difficulty was adding in the stems and trying to get the stems to mix well with the orchestra. I also wondered if it would be better to use another form of percussion instead particularly towards the form of electronics in order to convey a science fiction film.

In order to make the stem: Taiko's in Action Strikes (by Kontakt) sound as if they were in the same space, we had to add a long dark reverb from altiverb (by AudioEase) to make the space sound similar to Air Studios.

After meeting with Pablo, most of the changes during my mixing session were very small. He showed me that one of the stems was clipping and to reprint the same one at a lower volume. After a few minutes, he applied very light EQ to the entire mix and mentioned that I could add a bit more reverb if needed. Probably the most difficult part of the mixing process was mixing all the music, dialogue, and sound effects at the same time.

12. Mastering

The first time I started mastering, it was in Studio B05. That was probably my first mistake because when I mixed in the other studios it did not have as many changes to the sound as they did in the speakers in this studio. The low end was completely out of control and I felt as if I had to compress so much in order to gain the same mix that I had before. Even then, the processing in O-zone 8 was already so much. Despite my lack of experience as a mixer, even I thought this was too much.

I had to go back to previous versions in order to find my last saved version and decided to wait until the mixing session with Pablo in order to understand my mix before I even attempted to master. Instead of using one of my frequencies that I boosted in the EQ as an expander, he recommended I use a high shelf to make the other part of the mix sound more balanced instead of just one frequency itself. I brought the previous version, and overall the mixing session went way better than I thought originally. This was reflected in my mastering session with very light EQ processing and dynamic EQ but the musical outcome itself was fantastic.

13. Conclusion

Overall, I have learned so much in the process despite the issues and difficulties that I had experienced in order to get the final product that I have now. A lot of what I had was by myself, but much of it was a group effort. I now understand the turmoils of being a film composer in the industry and the lengths we have to go to make things happen.

In this process, I also learned how to not focus so much on what the world wanted me to do but to focus on what I wanted to do. This was also a challenge in many ways because I am a very indecisive individual with the willingness to grow. Although I had a few different projects in mind I was put in a position where I had to be the one making decisions.

Despite the fact that I am one of the younger composers of the group, I think I still have time to practice and grow to the level that many of my colleagues are. My C.E. served as a stepping stone towards my own goals of self-improvement both as a composer, voice director, mixer, attempted-mastering engineer, somewhat sound-designer, and as an overall character. I hope to continue the work that I have started here at Berklee and make the most out of this composer life to the fullest and continue to self-improve day-by-day and be that woman of war who fights for what she believes in.

Appendix:

Appendix A: Glossary of Terminology

Name	Definition
D.A.W.	Digital Audio Workstation - A software to work on audio (Logic Pro)
Temp	A track that is a placeholder before the real music
Motif	A small musical gesture that usually is around a beat
Destination Note	A note that the motif lands on
C.E.	Culminating Experience, a Berklee Graduate Project which includes a paper
Mixing	A post-production process of balancing the audio with many tracks
Conductor	Someone who waves a stick around in hopes that the musicians will understand
MIDI	Musical data which contains: How long a note is pressed, when it will stop, how hard you press said note, what note it is, etc.
Notation	The act of putting dots and lines on paper to compose in a musical language
Notation Software (Sibelius)	A software that does this notation for you (see notation)
O-Zone 8	An Isotope Mastering Plugin
Plugin	An external window that usually connects to a DAW (See DAW) and provides an external outlet for more sound manipulation
Mastering	The process of mixing audio with a single track and deals particularly with loudness
Slur	A round line which indicates phrasing or bowing (strings), breath (instruments that need to breathe), and for percussionists to let ring.
Duck Tail	Alfons's way of describing a moving melody

Appendix B: Version 1 Revision 3

C Score

2

8 Clicks Free

Reaching For The Stars

For Air Studios London

Julie McCarthy

Captain Marvel Rescore

Tempo (♩ = 120) Heroic, with Certainty

The musical score is arranged in a standard orchestral format. It includes staves for Flute I (with Flute* and Piccolo*Tranposed*), Flute II/Piccolo, Oboe I, Oboe II/English Horn, B♭ Clarinet I, C1 II/Bass Clarinet, Bassoon, Horn in F I, II, III, B♭ Trumpet I, II, Trombone I, II, Bass Trombone, Tuba, Timpani, Gran Cassa, Snare Drum, Bass Drum, Cymbals (with Sus cymbal and *let ring), Platti, Glockenspiel, Violin I - 10, Violin II - 8, Viola - 6, Cello - 6, and Contrabass - 3. The score is divided into four measures, numbered 1 through 4. The first measure is marked with a 4/4 time signature, and the second measure is marked with a 2/4 time signature. The score includes various musical notations such as dynamics (mp, mf, f, sf, sfz), articulation (staccato, sfz), and performance instructions (divi, *let ring). The score is written for a full orchestra and includes a variety of instruments and parts.

Appendix C: Example 5.3

Musical score for Appendix C: Example 5.3. The score is for Violins I and II, Viola, Cello, and String Bass. It consists of two measures. The Violins I and II parts play a continuous sixteenth-note pattern. The Viola, Cello, and String Bass parts play a rhythmic ostinato pattern of eighth notes. The score is marked with a forte dynamic (*f*) and includes various performance markings such as accents and slurs.

Wonder Woman Rhythmic Ostinato Measure 56-57

Musical score for Wonder Woman Rhythmic Ostinato Measure 56-57. The score is for two staves, likely Violins I and II. It consists of three measures. The Violins I and II parts play a rhythmic ostinato pattern of eighth notes. The score is marked with a forte dynamic (*f*) and includes various performance markings such as accents and slurs. The second measure is marked with a *div* (divisi) marking.

Musical score for Captain Marvel Rhythmic Ostinato 14-17. The score is for Violin 2. It consists of three measures. The Violin 2 part plays a rhythmic ostinato pattern of eighth notes. The score is marked with a forte dynamic (*f*) and includes various performance markings such as accents and slurs.

Captain Marvel Rhythmic Ostinato 14-17

Appendix D: Air Studio Microphone Date List and Locations:

L	M	N	O	P	Q	R	S	T	
SOURCE URL	https://docs.google.com/spreadsheets/d/1j4Y0ianRoxTr4lvTQgGVhVhGh2dmtB/			SHEET	micBooking				
SESSION	UID	START	END	LOCATION	MIC	AKA	SN	CAT	QUANTITY
Berklee 2019	10mAVpsEH5qJ4KaV-slsvSSIIrPt11Xs	2019-06-13	2019-06-14	HALL	AKG C12 VR			MICROPHONE	2
Berklee 2019	10mAVpsEH5qJ4KaV-slsvSSIIrPt11Xs	2019-06-13	2019-06-14	HALL	BLUE 9612 BOTTLE			MICROPHONE	3
Berklee 2019	10mAVpsEH5qJ4KaV-slsvSSIIrPt11Xs	2019-06-13	2019-06-14	HALL	BRUEL & KJAER 4011			MICROPHONE	2
Berklee 2019	10mAVpsEH5qJ4KaV-slsvSSIIrPt11Xs	2019-06-13	2019-06-14	HALL	DPA 4006			MICROPHONE	2
Berklee 2019	10mAVpsEH5qJ4KaV-slsvSSIIrPt11Xs	2019-06-13	2019-06-14	HALL	MANLEY VALVE MIC			MICROPHONE	2
Berklee 2019	10mAVpsEH5qJ4KaV-slsvSSIIrPt11Xs	2019-06-13	2019-06-14	HALL	MICROTECH GEFELL UM900			MICROPHONE	2
Berklee 2019	10mAVpsEH5qJ4KaV-slsvSSIIrPt11Xs	2019-06-13	2019-06-14	HALL	NEUMANN KM84			MICROPHONE	2
Berklee 2019	10mAVpsEH5qJ4KaV-slsvSSIIrPt11Xs	2019-06-13	2019-06-14	HALL	NEUMANN M50			MICROPHONE	3
Berklee 2019	10mAVpsEH5qJ4KaV-slsvSSIIrPt11Xs	2019-06-13	2019-06-14	HALL	NEUMANN TLM170 R			MICROPHONE	2
Berklee 2019	10mAVpsEH5qJ4KaV-slsvSSIIrPt11Xs	2019-06-13	2019-06-14	HALL	NEUMANN TLM50			MICROPHONE	2
Berklee 2019	10mAVpsEH5qJ4KaV-slsvSSIIrPt11Xs	2019-06-13	2019-06-14	HALL	NEUMANN U47 FET			MICROPHONE	4
Berklee 2019	10mAVpsEH5qJ4KaV-slsvSSIIrPt11Xs	2019-06-13	2019-06-14	HALL	NEUMANN U67			MICROPHONE	2
Berklee 2019	10mAVpsEH5qJ4KaV-slsvSSIIrPt11Xs	2019-06-13	2019-06-14	HALL	NEUMANN U87			MICROPHONE	8
Berklee 2019	10mAVpsEH5qJ4KaV-slsvSSIIrPt11Xs	2019-06-13	2019-06-14	HALL	SCHOEPS MK21			MICROPHONE	6
Berklee 2019	10mAVpsEH5qJ4KaV-slsvSSIIrPt11Xs	2019-06-13	2019-06-14	HALL	SCHOEPS MK2S			MICROPHONE	2
Berklee 2019	10mAVpsEH5qJ4KaV-slsvSSIIrPt11Xs	2019-06-13	2019-06-14	HALL	SCHOEPS MK4			MICROPHONE	4
Berklee 2019	10mAVpsEH5qJ4KaV-slsvSSIIrPt11Xs	2019-06-13	2019-06-14	HALL	SENNHEISER MKH 800 P48			MICROPHONE	4
Berklee 2019	10mAVpsEH5qJ4KaV-slsvSSIIrPt11Xs	2019-06-13	2019-06-14	HALL	SENNHEISER MKH20			MICROPHONE	2
Berklee 2019	10mAVpsEH5qJ4KaV-slsvSSIIrPt11Xs	2019-06-13	2019-06-14	HALL	SENNHEISER MKH40			MICROPHONE	6
Berklee 2019	10mAVpsEH5qJ4KaV-slsvSSIIrPt11Xs	2019-06-13	2019-06-14	HALL	SENNHEISER MKH50			MICROPHONE	2
Berklee 2019	10mAVpsEH5qJ4KaV-slsvSSIIrPt11Xs	2019-06-13	2019-06-14	HALL	GML MICROPHONE PREAMPLIFIER			OUTBOARD	1

SESSION	Berklee 2019			UID	10mAVpsEH5qJ4KaV-slsvSSIIrPt11Xs4TxRbz9rzoBY								
START	2019-06-13	END	2019-06-14	FROM	TO	LOCATION	MIC	AKA	SN	CATEGORY	QUANT	STOCK	AVAIL
2019-06-13	2019-06-14	HALL	AKG C12 VR							MICROPHONE	2	2	2
2019-06-13	2019-06-14	HALL	BLUE 9612 BOTTLE							MICROPHONE	3	4	4
2019-06-13	2019-06-14	HALL	BRUEL & KJAER 4011							MICROPHONE	2	2	2
2019-06-13	2019-06-14	HALL	DPA 4006							MICROPHONE	2	2	2
2019-06-13	2019-06-14	HALL	MANLEY VALVE MIC							MICROPHONE	2	2	2
2019-06-13	2019-06-14	HALL	MICROTECH GEFELL UM900							MICROPHONE	2	4	4
2019-06-13	2019-06-14	HALL	NEUMANN KM84							MICROPHONE	2	9	9
2019-06-13	2019-06-14	HALL	NEUMANN M50							MICROPHONE	3	3	3
2019-06-13	2019-06-14	HALL	NEUMANN TLM170 R							MICROPHONE	2	3	3
2019-06-13	2019-06-14	HALL	NEUMANN TLM50							MICROPHONE	2	4	4
2019-06-13	2019-06-14	HALL	NEUMANN U47 FET							MICROPHONE	4	9	9
2019-06-13	2019-06-14	HALL	NEUMANN U67							MICROPHONE	2	7	7
2019-06-13	2019-06-14	HALL	NEUMANN U87							MICROPHONE	8	13	13
2019-06-13	2019-06-14	HALL	SCHOEPS MK21							MICROPHONE	6	7	7
2019-06-13	2019-06-14	HALL	SCHOEPS MK2S							MICROPHONE	2	3	3
2019-06-13	2019-06-14	HALL	SCHOEPS MK4							MICROPHONE	4	7	7
2019-06-13	2019-06-14	HALL	SENNHEISER MKH 800 P48							MICROPHONE	4	4	4
2019-06-13	2019-06-14	HALL	SENNHEISER MKH20							MICROPHONE	2	4	4
2019-06-13	2019-06-14	HALL	SENNHEISER MKH40							MICROPHONE	6	8	8
2019-06-13	2019-06-14	HALL	SENNHEISER MKH50							MICROPHONE	2	2	2
2019-06-13	2019-06-14	HALL	GML MICROPHONE PREAMPLIFIER							OUTBOARD	1	1	1

Appendix E: Air Studio Performers

HILARY SKEWES & CO HILARY SKEWES & CO

THE BERKLEE SCHOOL OF MUSIC
AIR LYNDHURST STUDIOS
14th June 2018

THE BERKLEE SCHOOL OF MUSIC
AIR LYNDHURST STUDIOS
14th June 2018

10-1, 2-5

10-1, 2-5

FLUTE	KAREN JONES SARAH NEWBOLD (and piccolo)
OBOE	DANIEL BATES MATTHEW DRAPER (and cor anglais)
CLARINET	CHARYS GREEN SCOTT LYGATE (and bass clarinet)
BASSOON	GAVIN MCNAUGHTON
HORN	RICHARD WATKINS MICHAEL THOMPSON MARTIN OWEN
TRUMPET	DAN NEWELL SIMON MUNDAY
TROMBONE	ERIC CREES DAN JENKINS
BASS TROMBONE	ANDY WOOD
TUBA	OWEN SLADE
PERCUSSION	FRANK RICOTTI
TIMPANI	JOBY BURGESS

VIOLIN I

JONATHAN MORTON
THOMAS GOULD

DANIEL PIORO
MAGDALENA FILIPCZAK

MARTYN JACKSON
CORINNE CHAPELLE

BEATRIX LOVEJOY
CECILY WARD

YURI KALNITS
SARA TRICKEY

VIOLIN II

RALPH DE SOUZA
MARTIN BURGESS

MANON DEROME
JAN REGULSKI

ANTONIA KESEL
CIARAN MCCABE

NATALIE KLOUDA
ARIEL LANG

VIOLA

PHILIP DUKES
TIMOTHY GRANT

MEGHAN CASSIDY
ANIA ULLMAN

KOTONO SATO
LAURIE ANDERSON

CELLO

RICHARD HARWOOD
BEN CHAPPELL

PIERRE DOUMENGE
CARA BERRIDGE

TIM LOWE
PETER GREGSON

DOUBLEBASS

LEON BOSCH
DIANE CLARK

PAUL SHERMAN

Discography: Sources and Motivations

Orchestra, Alfred Music. "Wonder Woman, Arr. Victor López – Score & Sound."
YouTube, YouTube, 30 Apr. 2018, www.youtube.com/watch?v=CcYG4RBdKNI

Brown, Nate "Online Drummer: Army Military Marching Beat", 2008.

Bibliography

Brown, Nate "Online Drummer: Army Military Marching Beat", 2008.

Burlingame, J. (2019). Another Record for 'Captain Marvel': It's the Top-Grossing

Movie Scored by a Woman. [online] Variety. Available at: <https://variety.com/2019/film/news/captain-marvel-composer-pinar-toprak-top-grossing-movie-scored-by-woman-1203159811/> [Accessed 19 Jun. 2019].

Captain Marvel. Directed by Anna Boden and Ryan Fleck. Performed by Brie Larson. Captain Marvel.

Orchestra, Alfred Music. "Wonder Woman, Arr. Victor López – Score & Sound." YouTube, YouTube, 30 Apr. 2018, www.youtube.com/watch?v=CcYG4RBdKNI.

Shareef, Umar. "Zelect." Home Appliance, Electronics Selectors, Buying Guides in India. January 09, 2017. Accessed June 23, 2019. <http://www.zelect.in/inverter/square-wave-inverter-vs-sine-wave-inverter>.

TheCGBros. "CGI 3D Animated Short "Scrambled" - by Rubberbrain | TheCGBros." YouTube. September 20, 2016. Accessed June 23, 2019. <https://www.youtube.com/watch?v=wDDF0pWYo8Q&t=3s>.