

Orchestrating Cinematic String Quartets

*Arranging contemporary film music for the
String Quartet*

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ABSTRACT

The following research seeks to enlarge the string quartet repertoire by making and performing original re-orchestrations of contemporary film music. It examines the art of storytelling and how to reproduce a cinematic drama on a smaller scale – divorced from its visual component. The basis of this project is composer James Newton Howard's score for the Hollywood blockbuster *Fantastic Beasts and Where to Find Them (2016)*, using the recorded audio from *Fantastic Beasts and Where to Find Them – Official Motion Picture Sound Track (2016)*. The instrumental complexity of the soundtrack, combined with its narratively based formal structure, forward the quality of the research by posing methodical questions such as: 'How to convey the story of the film when the instrumentation is changed and the images are gone?', 'how to cut and shorten a long movie score without compromising the story line?', 'how to replicate orchestral and electronic music on acoustic string instruments?', and 'how to structure an arrangement to make it stage appropriate – in terms of length, thematic treatment, formal structure and emotional curve?'. Using structural analysis, transcription, orchestrating strategies, arrangement techniques and several layers of experimentation, the outcome of this research not only assumes a unique format – by its experimental orchestration techniques, its ability to tell a full-length musical story, and its pristine preservation of the original soundtracks texture, colour and emotional impact – but also hopes to have earned its title as a *cinematic string quartet*. This paper outlines a systematic method for arranging, transcribing and orchestrating what is initially a 1:08:51 minutes film soundtrack into a 30-minute concert piece for string quartet, in a way that preserves the underlying story of the film and the style of the composer.

DECLARATION

I unequivocally confirm that the source material does not belong to me. The album *Fantastic Beasts and where to find them – Official Motion Picture Soundtrack (2016)* is owned by Watertower Music Inc. and the film *Fantastic Beasts and Where to Find Them (2016)* is owned by Warner Bros Studios. All the music that is arranged is the intellectual property the composer, James Newton Howard. This thesis is meant for academic use only and will not be exploited for financial profit except with the permission of James Newton Howard's publisher, Alfred Music.

NB: I am aware that the text size in this document is 11 and does not conform with the conventional standard. The choice was made to facilitate reading and correspond better with the chosen layout.

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3. Suppressed Magic and Rising Tension (OST)
4. Inside Newt’s Suitcase (OST)
5. Chasing down the Remaining Beasts (OST)
6. Escaping Macusa Headquarters (OST)
7. Finale – Healing and New Friendships (OST)

Experiment Sessions Solo:

Sound 1 - col legno sul pont

Sound 1 - col legno sul tasto

Sound 1 - col legno w/ hair

Sound 1 - col legno

Sound 1 - dry spiccato

Sound 2 - pizz sul pont

Sound 2 - pizz with nail

Sound 2 - pizz

Sound 3 - harmonic quarter C

Sound 3 - natural harmonic half C

Sound 3 - open C flautando

Sound 3 - open C sul tasto

Sound 4 - crushed c sul A

Sound 4 - crushed c sul G

Sound 4 - crushed harmonic quarter C

Sound 4 - flautando c sul A

Sound 4 - non-existing harmonics on a-string

Sound 5 - artificial c harm. sul A

Sound 5 - harmonic c sul G

Sound 5 - harmonics

Sound 5 - natural d harmonic 1/4 string

Sound 6 - col legno open C

Sound 6 - spicc at frog half C harmonic

Sound 6 - spicc at frog quarter C

harmonic

Sound 6 - spicc flautando sul C

Sound 7 - behind bridge 2

Sound 7 - behind fingerboard

Sound 7 - behind bridge

Edited Experiment Tracks - String Quartet:

1. Main Titles
2. Exhibition – The Fantastic World of Magic
3. Suppressed Magic and Rising Tension
4. Inside Newt’s Suitcase
5. Chasing down the Remaining Beasts
6. Escaping Macusa Headquarters
7. Finale – Healing and New Friendships

1. INTRODUCTION

Background

The decline of young audiences at classical concerts for several decades is forcing the protagonists of this rich tradition to unveil new territories when it comes to repertoire and performance practice. The first objective of this research is to broaden the possibilities of the string quartet ensemble, by expanding its repertoire. Secondly, it is my wish to appeal to a larger audience by bridging the world of film music with that of classical chamber music. Contemporary film music is a synthesis of a wide range of musical traditions and cultures, and its universal appeal often functions as a bridge between social classes and communities. Thirdly, with its wide scope of techniques, ranging from ethnic instruments to electro-acoustic and electronic instruments, contemporary film music seeks to illustrate a story-line and create emotions appropriate to the sequence of visual events. By disconnecting this art form from its visual component, the hope is to create a unique type of concert experience and acoustic interpretation.

Working closely with my string quartet, the Arthema Quartet, it is my intention through this research to fortify my arranging skills, to deepen my knowledge of string instrument properties and to expand my ability to create musically interesting concert experiences, thus increasing our possibilities to perform in concert series, at festivals and to form interdisciplinary collaborations. Performing artists in this century are facing the twofold challenge of competing for jobs in a pressured environment and competing for audience in a rapidly digitalizing society. Tapping into the archaic force of storytelling, towards which I bear a fair amount of fascination myself, will not only serve the performance of my string quartet, but to investigate the relationship between storyline and music and transferring this knowledge to my own musical interpretation, can assist me as a musician in conveying more than just notes on stage – namely telling a musical story through the rhetoric power of music. Looking forward, the various strategies and routines derived from the research work will not only contribute to my own career as an arranger and chamber musician but, hopefully, it will assist others in the field by giving access to an effective toolbox of strategies within the string quartet-arrangement milieu.

The past decade has seen an increase in film score performances with symphony orchestras and live ensembles, ranging from the Rotterdam Philharmonisch Orkest performing *Harry Potter and the Philosophers Stone* in 2017 to composers like Hans Zimmer and James Newton Howard touring across the world with their own ensembles, creating sometimes spectacular performances with the use of visual media and light. YouTube, the biggest sharing platform for concert recordings on the internet,

has also had a surge of film music covers the past decade. Ramin Djavadi's *Main Theme* from *Game of Thrones* for instance, has over 150 different cover versions ranging from black metal bands to Orff instrument ensembles on YouTube. Yet, the aspiration of this project is not to create a multimedia presentation with extravagant visual accompaniment, nor to evoke a short-lived career on social media, but rather, to draw from the narrative power of cinematic music and creating a concert piece worthy of a chamber music recital, festival or big stage performance. My intention is to reproduce the original story, including its main characters, its sceneries, its succession of events and its elements of tension, following its dramatic curve from beginning to end. Thus, the finale adaptation includes effects, action sequences, manipulation of silence and fragmentation of themes in order to give the string quartet an approximation of the storytelling power that the original movie holds.

In my many years of practice as a string quartet violist, I experienced first-hand the appeal that film music has on a wide range of audiences. In 2012, an arrangement I made of the themes from the *Lord of the Rings* trilogy attracted over a hundred spectators into a tiny chamber music hall, from all walks of life. We had succeeded in drawing audiences previously unacquainted with the stages of classical music to the extent that several of them had to stand at the threshold of the concert hall for a whole hour to listen to the concert. An unofficial survey that a friend of mine made with about thirty 12-15 year old youth in 2017, showed that over 50% of them listened to film music on a regular basis. Based on a motivation to create a concert piece with the ability to attract new audiences to chamber music concerts – to bridge the gap between two segregated music cultures and relate to a younger generation of concert-goers – this research aims to be the beginning of a series of concept-performances with my string quartet.

Terminology

Film music has established itself as an art form upon the legacy of more than a century of development within the motion picture industry. BBC arts critic Nicholas Barber argues that despite the reports of cinemas closing and of piracy crippling the film industry, “we may actually be living in a golden age of cinema” (2016). The accessibility of films and TV series and the creation of numerous innovative art works breaking the boundaries of the Hollywood conventions, are some of the examples he uses to illustrate his point. But what is film music? Since its inception during the silent film era, film music has not only developed out of its roots in the late romantic orchestral tradition, but it has built its heritage by incorporating elements from popular culture, ethnic music traditions, the electronic music revolution of the 80's and well-established musical conventions from Western art music. “In fact, for spectators who are basically unversed in art music, films are the major site for

the transmission of a culture's musical conventions" (Kalinak, 1992, 14). In its effort to serve the visual narrative happening on the screen, film music has developed as its own genre, paying homage to centuries of musical traditions.

Music historian Blake Howe suggests that the music of a film is available from three different sources. First there is the notated score, "usually buried in the archives of a studio, guarded by copyright lawyers, and inaccessible to casual researchers" (Howe, 2016, 63), then there is the recorded performance itself which often combines live musicians in a studio with synthesized instruments added inside a DAW (Digital Audio Workstation), and lastly the soundtrack, which is a collage of all the sounds in the movie such as dialogue, effects and diegetic¹ music. During this research I will be using the published album as my main source, *Fantastic Beasts and Where to Find Them – Official Motion Picture Soundtrack* (Howard, 2016), which will henceforth be referred to as the soundtrack. A *cue* is a part of the soundtrack, connecting the music's beginning and end to its corresponding visual frame. An album track may have several cues merged together, or present a single cue with cuts. Since the original cues and their respective names are inaccessible to the public, the cues will be referred to by their track names on the album in this research.

Ever since its conception, music performance has been looked upon as a rhetoric art – appealing to the audience in a persuasive manner. "Music is a coherent experience, and because it is a system of expression possessing internal logic, it has frequently been compared to language" (Kalinak, 1992, 4). Storytelling is an archaic inheritance that seems to appeal to adults as much as to children. The role of a cinematic score is not only to colour and present the line of the story, but to raise its emotional impact by using the non-verbal emotional devices of music. When an audience is watching the movie they are not only following a story, but also attending a concert where the composer is seeking to trigger their emotions and enrich their experience. Thus, film music is composed with a very specific goal at hand, a goal which may have given it that very special property which seems to appeal diverse audiences. The rhetoric power of cinematic music then raises the question: Is it also possible that the ideas and inspiration that the composer derived from the movie can be felt by an audience when listening to a string quartet arrangement of the same music, even though it be disconnected from its visual component?

There are three terms describing my work towards the finale score that will require some clarification; transcription, arrangement and orchestration. Transcription refers to "music written

¹ Diegetic music is a term describing music that emanates from a visual source on the screen. For example playing on the radio in the background, live musicians or singing.

down from a live or recorded performance” (Ellingson, 2001). This was the first step that was needed in order for me to translate the soundtrack into a string quartet score, but, as will be seen, it is closely linked with the arrangement and orchestration processes. According to the Oxford Dictionary orchestration is “the art of combining the sounds of a complex of instruments (an orchestra or other ensemble) to form a satisfactory blend and balance. The term ‘orchestration’ is often used to denote the craft of writing idiomatically for these instruments” (Grove Music Online, 2001). Hence, I have chosen to put orchestration in the title of this paper, as it refers to my exploration of the possibilities inherent in the string instruments and the experimentation with the string quartet ensemble in order to recreate the atmosphere and narrative of the original soundtrack.

Arrangement is “either the transference of a composition from one medium to another or the elaboration (or simplification) of a piece, with or without a change of medium. In either case some degree of re-composition is usually involved, and the result may vary from a straightforward, almost literal, transcription to a paraphrase which is more the work of the arranger than of the original composer” (Boyd, 2001). The overall result of this research is an arrangement, especially with reference to the creation of form – the selection of material used and the simplification of the orchestral score into a four-instrument ensemble. What is commonly referred to as an arrangement in my experience as a classical musician, is more often than not a simplification of a piece of music in order to please the audience’s desire to hear a certain melody without the musicians having to rehearse too much. This is not the agenda of this research, as my main outcome is a highly complex piece of music, trying to recreate the sound of a cinematic symphony orchestra in its most pristine form. In the academic archives, there is no methodical research into the art of arranging and orchestrating string quartets, even less so applied to film music scores. The treatises made on orchestration techniques, arranging techniques and storytelling devices, referred to in the next chapter, build a vague code of reference, but it is my hope that the narrow focus of this research will contribute to the creation of many new concert experiences in the future.

Project Description

The score, *Fantastic Beasts and Where to Find Them – Official Motion Picture Soundtrack (2016)*, was chosen because of its seamless combination of electronic effects, sampler instruments and a live orchestra; its clearly defined themes that are easy to remember; its high popularity as a Hollywood blockbuster reaching across many generations and populations; and its “magic” element as a fantasy franchise that introduces a world beyond the reach of our daily lives. The soundtrack also combines a

wide range of scoring techniques including; electronic sampling and sequencing; recording a 150-piece symphony orchestra, two choirs, various ethnic instruments, polyphonic treatment, action sequences, leitmotifs, “Mickey Mousing”² and extravagant romantic themes developing over time. The task of arranging this complete score into a 30-minute concert piece was divided into three sections: *Analysis*, *Orchestration* and *Experimentation*, and the ultimate goal was to properly convey the story of the film in a string quartet arrangement, dissociating the music from its visual component.

The first task of the project regards the creation of a formal structure for the concert piece, using the narrative structure of the film as its basis. This was done by applying structural analysis to the film itself and juxtaposing it to its musical component. The methods of analysis used in that section are based on Gustav Freytag’s model of *narrative plotline* and the classical 3-act structure used in romantic operas and in mainstream Hollywood film. The criteria guiding the search for a formal structure included: Staying within a 30 minutes framework, preserving the underlying emotional curve of the movie, making a conscious decision when subdividing into musical movements based on the combination of chamber music conventions and cinematic story presentation, and using the original leitmotifs and thematic treatments to trace the development of various story elements such as the protagonists, antagonists, supporting characters, MacGuffins³, sceneries, plot conflicts, plot developments, and character emotions in the arrangement. Once the formal structure had taken a convincing shape, the transcription, arrangement and orchestration of an idiomatically tailored string quartet piece was at hand. Through the testing and developing of various orchestration strategies two central goals were to be met: to create a string quartet arrangement that replicated the textures, emotions and musical intentions of the original recording as realistically as possible, and to exploit the possibilities inherent in string instruments to the fullest in order to get a rich in sound, virtuoso and artistically viable concert piece. The final step in constructing the arrangement involved experimentation strategies through a collaboration with the Arthema String Quartet. Posterior to this an evaluation, editing and finale publishing of the arrangement was made. All the experiments were recorded and analysed to allow a deep reflection on the whole artistic process and final artistic product.

² “Mickey Mousing» is a film scoring technique “which matches the beat of the music to physical action in the image” (Kalinak p.26), deriving from the theory of parallelism in music.

³ “A MacGuffin is an object, event, or a person the characters in a story value greatly – so much so that nearly the whole plot revolves around it” (Whistler 2017).

2. METHODS

This research was divided into three consecutive stages. At the onset it was necessary to set up a formal structure (Stage 1: Setting the Formal Structure). This entailed making a thorough analysis of the film, its soundtrack and gathering relevant information about the subject. The goal of the film analysis was to understand the narrative structure of the film score, so that it could be translated into an arrangement. It was also needed to identify important tags in the story like protagonists, plotline, tension, action, climax and resolution, in order to be able to determine what structure would be most effective for conveying these on a smaller scale. The film *Fantastic Beasts and Where to Find Them* (2016) was analyzed using the Gustav Freytag *narrative plotline* method (Freytag, 1900) and the three-act opera model (Trottier, 1998), also known as the *Classical Narrative Structure*.

In addition to analyzing the film, a big portion of my preparations were spent on analyzing the music itself. This included creating a comprehensive lexicon of all the themes and leitmotifs present throughout the whole score, building a mental picture of the tonality of the piece, studying the instrumentation, identifying electronic layers in the recording and learning about James Newton Howard's composing techniques. A big part of this analysis was spent on studying James Newton Howard's orchestrators and the process that they used in order to orchestrate his music. The orchestrators working on this score were Pete Anthony, Jeff Atmajian, Jon Kull, John Ashton Thomas, Philip Klein, Peter Boyer, David Butterworth and Jim Honeyman (Howard, 2016). Most of which had already worked with J.N. Howard on many movies. I studied the techniques and styles of the first three, as they had worked the longest with this composer (Heine, 2016).

The process of dissecting the music into comprehensible samples prompted a further investigation into the biography of the composer himself. The sources used for this are the biography and filmography by Erik Heine in his book *James Newton Howard's Signs – a Film Score Guide* (2016) as well as several articles, video blogs and interviews (Broxton, 2016. Roszell, 2017. Pape, 2017. Howard, 2017. Guru, 2017). This contributed to learning about the various influences on this composer's style and technique, such as his background in popular music and his great reverence for Tchaikowsky and Beethoven (Heine, 2016). It also helped me identify his "musical language" so that it could easier be replicated or imitated in the string quartet orchestration. The possibility that I would have to compose some of my own transitions or codas in my own arrangement required a well-founded knowledge of his compositional style, thus I also listened to several of his most famous film scores such as *Dave* (1993), *King Kong* (2005) and *Lady in The Water* (2006). Not only could I content with studying film scores by the composer, but I resolved to watch several of his movies in order to track down the

following: 'How does he attach a theme to a character and how the themes develop over time?', 'How does the orchestration of each theme reflect the emotions featured in the movie?', and 'What can the similarities found in his wide range of scoring techniques teach me when I subtract them from their respective stories?'. Through watching several interviews with James Newton Howard, I not only learned a lot about his work flow and thought processes, but it also helped me de-mystify his craft in order to make it more accessible.

A gained insight about the role of music in a narrative motion picture, deducted from books such as *Settling the Score – Music in the Classical Hollywood Film* by Kathryn Kalinak (1992) and *Film Music, a neglected art - a Critical Study of Music in Films* by Roy M. Prendergast (1977), is a necessary preparation for anyone seeking to pay homage to this narrative art form. Research into these books revealed the underlying assumptions behind a film music composers work, such as the tradition brought from the silent movie era, the conventions taken from pop culture and the collaborative process with a film director. All of which helped me create an inner framework for the thematic development, the structure and the orchestration of my piece. The understanding of how composers use musical building blocks to arouse certain emotions also helped design a model for how to transfer these emotions in a string quartet arrangement.

As soon as the formal structure of the piece had been set, the next step was to begin the transcription, arrangement and orchestration processes (Stage 2: From Transcription to Orchestration). This section was begun by transcribing the complete orchestral score of the first cue *Main Titles* ([appendix 4](#)), with the following goals: Training the skill of analytical listening, training the ability to swiftly perceive instrumentation, texture and scoring techniques, and building a visual representation of the orchestra used throughout the complete soundtrack. The need to have a clear and unaltered sound image calls for the use of high quality studio headphones, in my case the Beyerdynamic DT 770 Pro were used throughout the whole research. I also used the opportunity to build strategies for transcription so that it could enhance an effective work flow for the transcription and orchestration tasks.

In order to improve my orchestrating techniques, reference was made to the books *Orchestration* by Walter Piston (1980), *Orchestral Technique* By Gordon Jacob (reference) and the article *Writing for String Quartets* by Peter Reynolds (2011). In addition to this there was the necessity of creating a lexicon for my own use, fully mapping the various techniques that can be used on string instruments and how those techniques can be incorporated in a string quartet orchestration. The foundations of this lexicon were the technical treatises *Principles of Violin Playing & Teaching* by Ivan Galamian (1985) and *Fiolin Talentutvikling – Teknikk og Tonekvalitet* by Terje Moe Hansen (2001). This lexicon

became essential in the process of determining which technique to use when trying to imitate various orchestral textures. It also aided me to get inspiration when stagnating in the orchestrating work. An additional step taken to increase my proficiency in arranging and orchestrating was to take lessons with film music composers and practicing composing inside my DAW. The teachers I visited were Jurre Haanstra (2017), Hans Timmermans (2017) and Matthias Wittwer (2017). In addition to this an interview was held with professional arranger Henk de Flieger (2017).

Another help in the transcription and arranging process was Mihaly Csikszentmihalyi's theory of *Flow*. In order to sustain the many hours of listening, transcribing and solving instrumental problems that this task set forth, it was paramount that the activity itself was self-rewarding. The concept traced by Csikszentmihalyi of experiencing a perfect balance between the difficulty of the task and one's ability to execute it, lays the foundation for a mental and physical state where time, space and bodily comfort are forgotten, and one is "engulfed in the task" (Waagen, 2011, 119). Based on his theory that flow can be achieved through creating realistic goals with clear sub-goals, choosing an initial content that is engaging, creating an environment void of distractions, gradually increasing the complexity of the task and gaining constructive feedback from achieving the sub-goals and solving problems (Waagen, 2011, 123), several self-made strategies on how to devise my time and how to enter the *flow* mood early on in a transcription session were charted. For example, I would start a session with an internal dialogue of this sort: "I will now transcribe 00:20-00:45 in this recording. Then I will orchestrate it using strategy no. 1 after which I will listen to the result and solve arising problems."

The orchestration process itself, which as mentioned is closely linked to the transcription, led to the development of 3 distinct strategies through action research. Each strategy was prepared in order to solve various problems encountered, then based on the analysis of this problem it was formalized into a graph or an illustration. This illustration was further tested in practice, then based on my observations I would reflect evaluate and perfect the strategy model. The three strategies are: *Orchestration strategy 1 – general technique*, *Orchestration strategy 2 – for sound blocks* and *Orchestration Strategy 3 – for complex polyphonic sections*. Each of these will be explained and illustrated with examples in chapter 2.3 under FINDINGS. Finally, it should be mentioned that the orchestration section of this project also involved its own level of analysis, since this section also included arrangement choices. In order to find out how to construct a 6 minute movement from 18

minutes (1 scene) of material⁴, further self-tailored analysis was performed and will be described in subsequent sections in this work.

The third and last section of this research focused on experiments (Stage 3: Experimentation and Evaluation). Each experiment was executed with a pre-made protocol, recorded with a H4N hand recorder and edited in Logic in order to be analysed. The first experiments were performed on myself where I would use *Orchestration Strategy 2* to identify sounds and colours and then test out various techniques on the viola in order to replicate those sounds as realistically as possible. After recording the sounds, I would listen to the audio files when trying to solve specific orchestration problems and transcribe them into my arrangement when found appropriate. The second part of the experiments took place as soon as my first draft of the arrangement was complete. The draft contained various unfinished bars and some alternative variations of other bars. The individual string parts were printed out, given to my quartet and played *prima vista* to the best of their abilities. Based on a pre-made protocol including a guiding hypothesis and controlled variables, the experiments were carried out and recorded. Finally, after recording the quartet playing *and* the dialogues happening during the recording sessions, I would sit down with the recordings, the annotated scores from the sessions and the Sibelius projects, editing it all down according to several parameters such as: technical ease, resemblance to the original, correcting typos in draft document, playability and more. The evaluations were logged and after all the changes had been made my finale score was ready for performance.

A short note should be written about the legal issues pertaining to this project. As mentioned before, film music is protected by several layers of copyright law and conventions artistic property, which I studied fully in the Berne Convention prior to this research (1971). As part of my arranging work I saw it as my obligation to acquire the permission from James Newton Howard to arrange his copyrighted intellectual property. Yet the complex web of communications, legal fees and formulation of contracts that is involved in such a request were way beyond span of this research and would possibly deserve a separate thesis of its own. For example, in order to be allowed to arrange music for commercial purposes I would need to contact J. N. Howard's publisher, Albert Music, and state the exact tracks from the OST (Official Soundtrack) that I want to arrange, and then I would have to pay a fixed fee for each of these tracks that would amount to about 1.000€ just for this arrangement. This process also takes about 6 months of correspondence (in my previous experiences as an arranger) and the likelihood of them even responding to a request that wouldn't benefit them financially are minimal. Since I had no way of knowing exactly which tracks from the OST that would

⁴ The 4-minute estimation was determined based on the average time of a movement to fit within a 7 movement, 30-minute framework.

be in my arrangement at the onset, there was no way I could apply for permission before making the arrangement. Nevertheless, the day that this arrangement will be published or sold for profit, the proper procedures will be sought out.

3. FINDINGS

STAGE 1: SETTING UP THE FORMAL STRUCTURE

1.1 PRELIMINARY RESEARCH

The initiating steps in this research include a wide range of background study, all of which contributed to magnifying the loupe under which my arrangement was to take shape. My research into the life of James Newton Howard himself led to several relevant facts which will be shortly summarised in the coming paragraphs. His way into Hollywood was not through the world of composition, but rather as a keyboardist playing for popular bands. He started playing the piano at the age of four, on a piano owned by his grandmother who had played violin in the Pittsburgh Symphony in the 1930's, and growing up he was exposed to lots of classical concerts getting well-acquainted with the repertoire. "Probably my single most favourite composer is Beethoven. For me there is nobility and at the same time this incredible yearning and tenderness and a strength in the music that I found absolutely irresistible as a child" (Heine, 2016, 3). Howard also cites composers such as Tchaikowsky for influencing his melodies and Ravel and Debussy for his orchestration, notes that are helpful in attempting to understand his compositional style.

At the age of 18 he was accepted into the Music academy of the West, Santa Barbara, California, but he quit his studies after only 6 weeks because "I'd been doing it for about 14 years at that point, and I was tired of practicing other people's music. I just knew it wasn't in me to keep doing that for the rest of my life" (Heine, 2016, 3). He then launched on a career as a session keyboardist in several bands such as Mama Lion and The Pointer Sisters, and as an orchestrator and arranger (particularly of string accompaniments) for singers such as Barbara Streisand and Olivia Newton-John. In 1975 he was contacted by Elton John and together they worked on several albums, tours and top-ranking hits such as "Sorry seems to be the Hardest Word" and "Don't go breaking my heart". It was in 1985 that he did his first movie score for the film *Head office*, after having played keyboard in a couple of film music orchestras. Since his first movie became a hit, he went on to score several less famous movies until his big breakthrough came with the scoring of *Pretty Woman* in 1990. He left his career as a keyboardist and now spent all his time on what he deemed a more "musically interesting" way of working, and something he "immediately loved doing" (Heine, 2016, 7). Since then he has scored over 150 credits ranging from romantic comedies and westerns, to science fiction movies and thrillers – earning him 64 awards including 8 Oscars (IMDB, n.d.). Among his most famous movie scores are *Promised Land* (1988), *The Prince of Tides* (1991), *The Fugitive* (1993), *Dave* (1993), *Wyatt Earp*

(1994), *Junior* (1994), *Space Jam* (1996), *The sixth Sense* (1999), *Signs* (2002), *King Kong* (2005), *I am Legend* (2007), *The Hunger Games: Catching Fire* (2013) and the *Batman Trilogy* together with Hans Zimmer (2005-2011).

Howard's approach to film scoring is mainly based on composing within a Digital Audio Workstation (DAW) creating a so-called *Mockup*. A mockup is a demo track that is sent to the film director for feedback and using in the editing process.

"Here are the options: you can either be exhausted from creating the demo and sequencing and basically orchestrating the movie, or pick up a pencil and spend four weeks sketching, which was mind numbingly difficult and time-consuming. So at this stage I would prefer to do the demo process. I'm very fast at it." (Heine, 2016, 28)

As mentioned before, his compositional style is influenced by many of the romantic composers during the 1800's. But he also picked up a lot of techniques from 20th century composers such as Stravinsky. Most notably in his changing and asymmetrical metres, and in his approach to having multiple musical threads occurring simultaneously, a technique known as *stratification*. In an interview with Michael Schelle (Heine, 2016) he mentions some of the "sound-mass architects" of the 1960's: "I am a huge Ligeti Fan, a big Penderecki fan" (p.27). His use of leitmotif is based on the Wagnerian tradition, and coming from a pop music background his approach to writing themes is very intuitive. "Tune writing is relatively simple for me, but it's also a very intimidating problem. I approach most scores from the 'theme is king' perspective – I try to put the thematic material in perspective before I do too much else in the score" (p.28).

This idea can easily be traced in his score for *Fantastic Beasts and Where to find them*. In an interview with Stefan Pape he states the following about the process of scoring the movie:

"My first order of business was to sit down and write some music that I thought might be applicable. So, I wrote two themes for David [Yates] and we talked a lot, and I sent over two eight-minute suites that involved two themes one of which became kind of the main umbrella theme for the Fantastic Beasts universe and the other one became Eddie Redmayne's character, Newt Scamander, it became his theme. They were very useful." (Pape, 2016)

He also expresses having built his musical language for the franchise on the legacy coming from John Williams and the composers creating the *Harry Potter* universe before him. In 1994 for when he composed his first western score *Wyatt Earp*, he said in an interview, "I probably listened to every western soundtrack ever written to see how other composers did before me" (Heine, 2016, 43). It is fair to assume that he took the same approach for scoring within the *Harry Potter* franchise. He

usually talks very enthusiastically about his themes, as though they represent much more than just a leitmotif or a “Mickey Mousing” to the screen. In his vlog he describes one of the themes from *Fantastic Beasts* as “the one that I really like - it’s sort of a romantic theme – but it’s, I think of it as a romantic theme, but I also refer to it as the ‘healing theme’” (Howard, 2017).

It is important to understand James Newton Howard’s musical language in an arrangement task such as this, in the case one would have to compose transitions or codas in order to glue the various elements together. Erik Heine in his book about JNH argues that it is impossible to pin down a specific Howard-sound, because he is what he refers to as a “chameleon-like composer”.

The ‘James Newton Howard sound’ is difficult to pin down, elusive yet familiar, recognizable when it’s heard but hard to define. For a composer who does his best to distance himself on every project, difficulty defining a specific sound should come as no surprise. (2016, 35)

Howard himself once said, “While I’ve endeavoured not to repeat myself, I have by definition done many scores that sound like James Newton Howard. I’m trying to escape that by taking chances.” (Heine, 2016, 32) He is a composer that masters every idiom of music and puts his ego behind in the process, making his style adaptable to whatever movie he is working on. From the score of *Fantastic Beasts* one is able to subtract certain common traits that come close to defining his particular style in this score. One example is the use of ‘motifinal snippets’⁵, where long melodic themes, or even melodic four-measure phrases, can be absent in favour of short melodic motifs of three to six notes (Heine, 2016, 33). His leitmotifs are usually melodic or motifical, but rarely textural. The harmony is mostly based on mediatic modulations, Neo Riemann Technique, pop music chord progressions and late romantic treatments. His orchestration is light and transparent, often pianistic and citing a wide range of composers from the past 100 years of film music tradition.

Before going into depth with the analysis of *Fantastic Beasts and Where to Find them*, we will look at some findings about the art of film music scoring and how these relate to arrangement technique. Film music dates all the way back to the silent film era starting in the late 1800’s. Back then, film music would either be improvised freely by a pianist or an organist, or performed out of cues by bigger orchestras or ensembles (Kalinak, 1992).

Music was introduced as a kind of antidote against the picture. The need was felt to spare the spectator the unpleasantness involved in seeing effigies of living, acting and even speaking persons, who were at the

⁵ James Newton Howard describes this melodic approach in an interview with Jeff Rona in 2009: “I’ve tried to be less melodically driven except when I make a conscious decision to do it. Most of the time I try to be a little more vague about my implications.” (Heine, 2016, 33)

same time silent. The fact that they are living and non-living at the same time is what constitutes their ghostly character, and music was introduced not to supply them with the life they lacked – but to exorcise fear and help the spectators absorb the shock. (Kalinak, 1992, 45)

Film music therefore not only has the role of evoking emotion in the audience, but also facilitating the perception of time in an otherwise non-linear visual cavalcade. “Underlying music’s function as a unifying agent is its constitution as rhythm. The position that music is an ‘art that exists in time’ is a principle that surfaces in several studies on film music. According to this argument, musical accompaniment is critical to an art form that lacks a clear system for marking its own chronological progression” (Kalinak, 1992, 47). This may explain why James Newton Howard once described a strong interest in the rhythmic element in music, “[by which] I mean electronically generated or acoustically generated percussion” (Heine, 2016, 32).

Another way the film music composer builds a bridge to the audience is through the use of *musical conventions*. One of these is the Leitmotif, as mentioned before, generated from Wagner and Weber’s late romantic music. Some academics argue that the incorporation of classical music conventions into the motion picture scores was a way for the medium of film itself to establish its cultural legitimacy. “By taking an element from high art, opera, and applying it to a lower art form, film, it elevated film above its low art origins” (Heine, 2016, 25). The codification of a film music tradition set forth by composers like Erich Korngold, Max Steiner and Dmitri Tiomkin also reached out to the popular culture. A parallel to this can be seen in James Newton Howard’s use of jazz music elements to invoke the scenario of the 1920’s New York. “A musical convention harnesses musical affect to specific and concrete meaning through the power of association” (Kalinak, 1992, 12). Howard is an expert of drawing from musical conventions built over centuries. Within the first 30 seconds of *Fantastic Beasts* he quotes John Williams’s theme for the *Harry Potter* franchise, *Hedwig’s Theme*, immediately drawing the audience into the fantastic universe of magic through the simple power of association.

Through [film music] the modernist meets the romantic, art music greets easy listening. Our universal language turns out to be film music. After all, it’s a language where two notes means shark [reference to *Jaws*], where shrieking violins mean murder [reference to *Psycho*], where a jaw harp and a whistle means gunfire [reference to Westerns]. What other art form communicates *this* clearly? (Golding, 2016)

It becomes clear from these passages that the composing process for film is inherently different from other compositions. A film music composer is bound to the image and the story, and cues are often put behind dialogue, forcing the composer to compromise his artistic ideas over and over again. One conclusion to draw from this, is that, as an arranger of film music, the same mind set needs to be

applied. The music might not be thematically or texturally interesting at all times, but that doesn't necessarily de-legitimize its emotional value. Another lesson to draw from the use of conventions, is that chamber music also has a legacy of musical conventions built up for centuries. Haydn composed the Kaizer Quartet and the Lark Quartet building association motifs for royalty and birds. In Ralph Vaughan Williams' *Lark Ascending* the violin is exploited to its fullest to imitate bird sounds and the act of flying. These conventions surely have to be accompanying the process of orchestrating for strings, since a harp may sound very place-determining in an orchestra, but I would need quite different techniques to imitate flying magicians with four string instruments. It can also be concluded that the language of film music, despite having its roots in classical and pop traditions, is a genre of itself following its own set of conventions and expectations.

1.2 SHORT NOTE ABOUT THE FILM

The script for *Fantastic Beasts and Where to Find Them* was written by J.K. Rowling, the creator of the Harry Potter franchise, and directed by David Yates in 2016. It is the first movie in a spinoff series intended to accumulate 5 movies in total, the next scheduled for release already in November 2018. More than being an appealing fantasy film, this movie brings up highly relevant themes of our time such as: the re-definition of a male hero stereotype, the warning against exterminating endangered species from our eco system, the triumph of inter-racial unity over extremist views of segregation, the condemnation of suppression by the powerful through fanaticism and dark ideology, and the emphasis on de-escalation as a means to resolve conflict rather than the stereotypical Hollywood confrontation.

The film follows its protagonist, Newt Scamander, on his trip to New York. Newt is a British wizard with a shy, sensitive and humble character, and a great fascination for fantastic beasts. His quest in New York is to release the Thunderbird so it can fly to the Amazon forests where it belongs, but soon enough he gets involved in a larger plot taking place in that city. We get introduced to the wizarding community in America, their struggle to stay hidden in the face of recent mysterious events, and the escape of the malicious wizard Grindelwald. Newt's life quickly gets involved with that of the no-mag (which is the American wizard term for non-wizards) Jacob Kowalsky, as their suitcases accidentally swap. As a consequence, some of the magic creatures living inside Newt's suitcase escape into the city, and together the two of them launch on an adventure trying to catch the escaped beasts.

Tina is our third protagonist, and she works for the Ministry of Magic in New York, MACUSA. Her job is to arrest Newt Scamander as he has broken the laws of keeping the magic world hidden. Gradually,

their lives get intertwined and Newt gets mixed into the problems facing the magicians of New York. An Obscurus is loose in the city and is creating great turmoil as it destroys neighbourhoods and even murders a city council member. An Obscurus is a dark being that appears inside a child when that child suppresses their magical powers. Thus, the theme of suppression is introduced, following our presumed antagonist Credence in his struggle to hide his magic powers from his witch-hating foster mother, Mary Lou. The many events that unfold engage Newt, Kowalsky, Tina and her sister Queenie on a quest to save the city from escaped beasts, the torment of the Obscurus, the corruption of our main antagonist Grindelwald from inside MACUSA and above all – saving Credence by showing empathy, love and de-escalating the suppressed anger growing within him.

The music of this film is accessible to the public through its soundtrack and in the film itself. Heine describes the soundtrack as a selection from the entire film score (2016), most often made by the composer himself in collaboration with the production team for the album release. The composer chooses a selection of cues, sometimes shortens them by making cuts and fits them into the format of album tracks. The order of the tracks sometimes differs from the order they appear in the movie. Bonus tracks may be added at the end of the album, which is a choice made deliberately by the composer in order to give the album a proper life of its own. The album cover includes a lot of information about the score that has been relevant in this research, such as instrumentation, orchestrators and studio, therefore it has been appended to this report for the convenience of the reader ([appendix 6](#)).

1.3 ANALYSIS

Having determined what musical language I was operating within and the underlying assumptions of the film music genre, it was time to start on the ambitious project of creating a chamber music piece within the same framework. The first step was to set the structure of the planned piece. Since this is to be considered a *new* form of performance, it was necessary to re-define the basic structure of the traditional string quartet. A typical string quartet is divided into 4 movements, fast-slow-fast-fast, and lasts about 20 minutes. But since my piece was to be a narrative piece, it was figured that the best way to determine its form was to draw its format from the narrative structure of the film itself. Therefore, the first step in order to determine the form of this piece was to thoroughly analyse the structure of *Fantastic Beasts and Where to find them*.

Gustav Freytag's analysis of drama described in his book *Freytag's Technique of the Drama, An Exposition of Dramatic Composition and Art* (1900) and the three-act-structure analysis as set forth by David Trottier in his book *The Screenwriter's Bible* (1998) are the foundations for analysis. Gustav

Freytag came up with a model for measuring a dramatic curve divided into five parts: (1) Exposition, (2) Rising Action, (3) Climax, (4) Falling Action and (5) Resolution (*dénouement*). Each section is designed in such a way as to push the narrative forward through introducing a plotline according to the emotional tension in the story. The exposition sets the stage by introducing the setting, the protagonists and the main plot. Then, as we enter the second act a series of events, often connected to our antagonist or a conflict, set up the stage for the climax in which there is a major turn of events. The falling action follows our protagonists as they unravel all the mysteries and conflicts set up in the first acts, and the resolution gives us an ultimate release of tension and closure to the story (Freytag, 1990, 115-135).

The analysis process was started by conducting an in-depth analysis using the Gustav Freytag plot model as seen in the *narrative plotline chart* (Figure 1, below). As can be seen in the diagram the plotline is divided into 5 sections, each with its own micro-analysis. The *exposition* sets the stage by introducing the place, the time, the main characters and creating expectation. (It was important to determine exactly which characters get introduced when, since it would help me set the order for their respective leitmotifs in the musical arrangement.) In the *rising action* section, the plots main conflict starts to manifest and the audience is starting to feel a building tension. The antagonists are here properly introduced and the film is making a big effort for us as audience to feel an intimate connection with our protagonists. The *climax* is set in motion by the cue “Escaping Macusa Headquarters” (1:14:00), but it does not culminate until Credence dies in 1:47:00. Within this 30-minute window several of parallel plotlines that have been at work until now, find their way to each other and create what I’ve chosen to call pre-climaxes. The time indication in this graph are indicative of when the various sections pass over to the next. Time indications inside the micro analysis boxes refer to the timing of significant events in the movie.

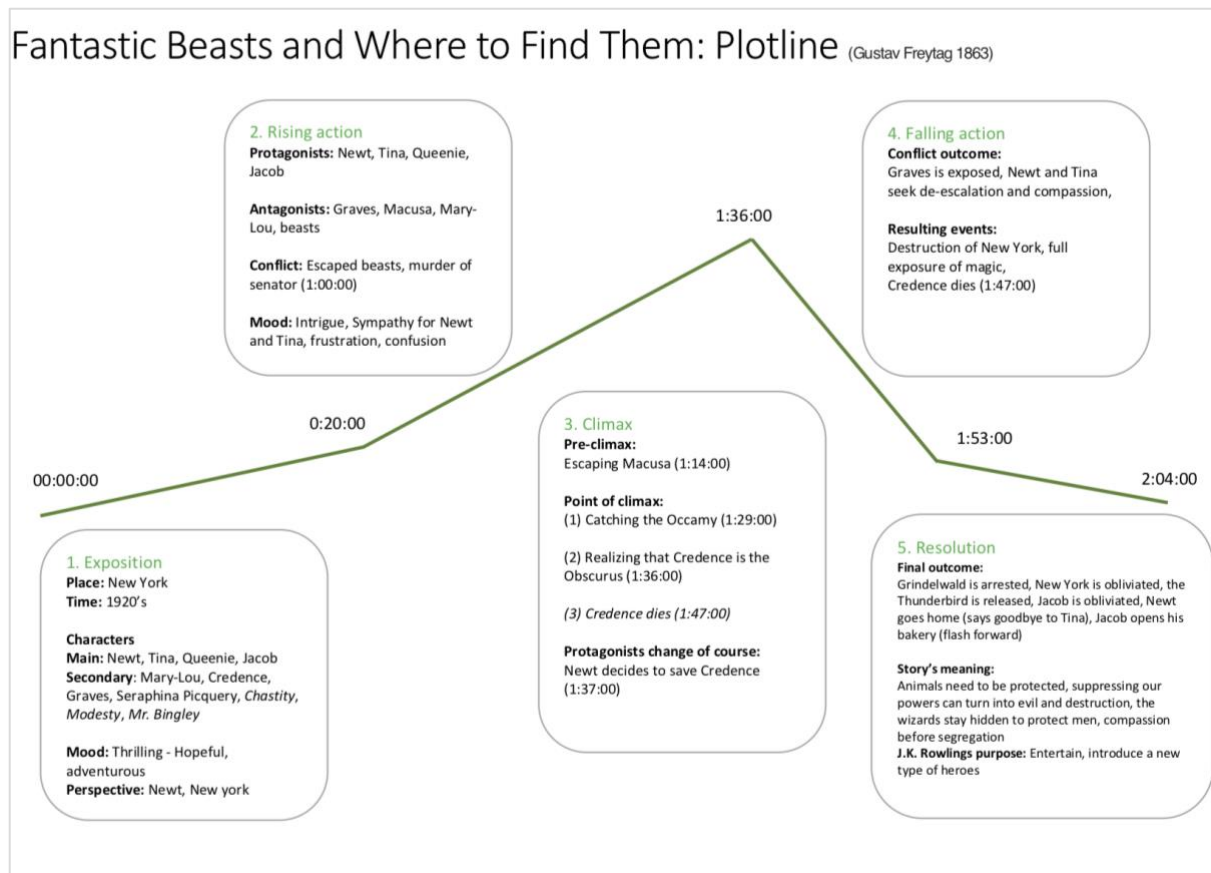


FIGURE 1: NARRATIVE PLOTLINE CHART

The *falling action* presents us with a steady de-escalation of events, resulting in the arrest of our main antagonist Grindelwald and the unfortunate death of Credence despite the efforts of Newt and Tina to save him. In the resolution several threads are pulled together as well as certain hints for the coming movies. Already at this point it was becoming clear which musical themes would be most crucial to describe the central points along the plotlines. For instance, the great climactic “Healing Theme” accompanying the release of the Thunderbird above New York with some spectacular bird-eye views over the city, would become a central theme for the musical resolution in the arrangement.

After having traced out the entire story of the film in the Freytag model, the main musical cues from the movie soundtrack were placed into the same chart. The result can be seen in figure 2 (below), where every single track from the soundtrack album has been included. In the exposition it was also necessary to write down the mood created by the music, as this would affect the choice of opening music in the arrangement. The tracks don’t always appear in the same order as on the CD, especially since several are bonus tracks on the CD and were placed at the end of the album (see [appendix 6](#) for

complete track list). This chart helped determine the musical role of each cue in the soundtrack album and placing them within a narrative context.

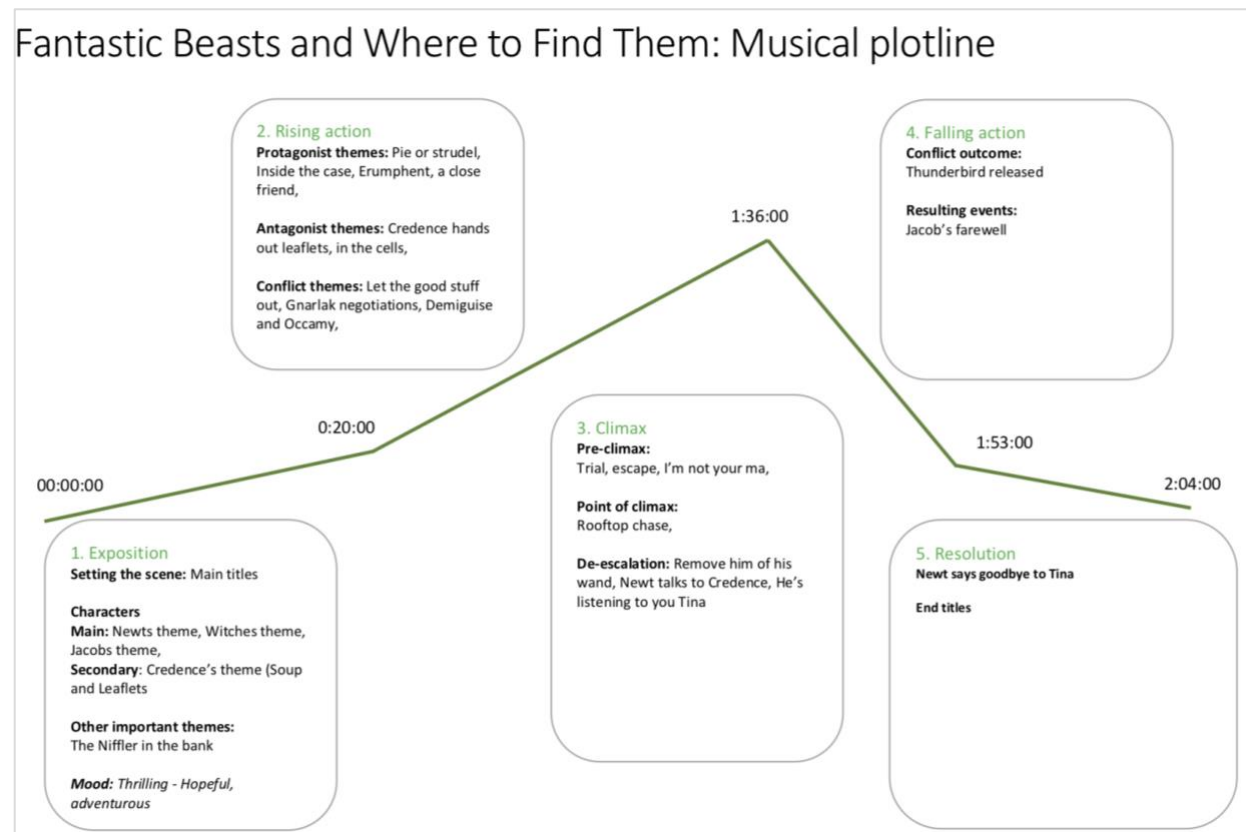


FIGURE 2: MUSICAL PLOTLINE CHART

As can be seen on both charts, the time frame is quite unbalanced in terms of duration for each of the five sections. The Rising action is for example 1h and 16 minutes long, whereas the resolution is only 11 minutes long. This showed that dividing my piece into 5 consecutive movements based on the Freytag 5-part model wouldn't give me balanced time proportions to build on, which is deemed necessary if the classical movement division is to be somewhat adhered to. So, in order to divide my music into more accessible building blocks, I turned to one of its root sources, opera. By using the 3-act division that is well established in classic opera from the Romantic era and also in theatre at large, a new graph was created, placing the musical material into three distinct acts and subdividing them into scenes.

The three-act structure that is commonly used in films and opera was gradually established in France in the 17th and 18th centuries, in an attempt to return to the style and order of the Greek Antique

(Tilmouth, 2001). The three acts have since been referred to as (1) Setup, (2) Confrontation and (3) Resolution. The structure is also commonly used for classic Hollywood blockbuster movies⁶, and each act is divided into scenes that drive the plotline forward. Although this form of analysis has a lot in common with Freytach's five-part model, the simpler division into 3 acts has helped gain an overall structure of the film score as it is commonly used in symphonies, concertos and string quartets from the classical music repertoire. It should also be mentioned that *Fantastic Beasts and Where to Find Them*-writer J.K. Rowling published the screenplay commercially in 2016, but since the structure used in that screenplay has been adapted for commercial purposes I have made my own analysis based on my subjective observations of the film and its score.

Time division (according to visuals)

Scene	Act 1: Scene 1	Act 2: Scene 1	Scene 2	Scene 3	Scene 4	Act 3: Scene 1	Scene 2
Time	00:00-18:54	19:00-37:00	37:00-57:15	57:15-1:14:53	1:14:53-1:32:55	1:32:55-1:47:00	1:47:00-2:04:12
Story	Introducing the characters and the story. Exposition	Problems start accumulating. The reality seems more severe and interconnected than reality. Rising Action	Newt and Jacob go inside case and catch the Niffler and Erumpent.	Arrestation, story about Obscurus complicates and	Catching the remaining beasts. Cutaways to Credence.	Finding and stopping the Obscurus. Climax	Obscurus is destroyed. New York gets Obliviated Falling action and resolution.
Sound-track	1) Main titles 2) There are Whitches among us... 3) Tina takes Newt in 4) Soup and leaflets	1) The billywig 2) The demiguise.. 3) Pie or strudel 4) Credence leaflets	1) Inside the case ... 2) The Erumpent ...	1) In the cells 3) Trial and escape 4) Gnarlack 5) I'm not your ma	1) Demiuise and ochamy 2) A close friend	1) Obscurus, rooftop chase 2) Newt talks to Credence 3) He is listening to you Tina	1) Relieve him of his wand... 2) Newt says goodbye to Tina 3) End titles 1 & 2

FIGURE 3: THE 3-ACT STRUCTURE DIVISION

The resulting graph traced out the story based on the 3-act structure and subdivided each act into scenes according to one or more of the following criteria: a) A micro-conclusion of events or a story

⁶ The three-act structure is often referred to as the *Classical Narrative Structure* and considered the most common structure of storytelling in mainstream film (Poyntz, 2002).

line, b) change of scenery, c) introducing a new sub-plot to the story and d) a drastic change of mood. Within each scene, the various events happening in the movie as well as their accompanying cues from the soundtrack, were written down. As can be seen in the resulting model (Figure 3, above), this led to 7 scenes spread over 3 acts. One scene is situated in *Act 1: Setup*, four scenes in *Act 2: Confrontation* and two scenes in *Act 3: Resolution*. This model, although carrying a lot of common traits with the Freytag graph, gives a much more organic way of subdividing the mid-section, which in both models is the most substantial one. Further calculation also shows that each scene is approximately the same in temporal length; lasting an average of **18** minutes out of a **2 h. 14-minute** movie (Figure 4).

Timing of scenes		
Scene	Time	Volume (time)
Scene 1	0:00:00	19
Scene 2	0:19:00	18
Scene 3	0:37:00	20
Scene 4	0:57:15	18
Scene 5	1:14:53	18
Scene 6	1:32:55	14
Scene 7	1:47:00	17
End	2:04:12	

FIGURE 4: TIMING OF SCENES

Based on the two models above and the process of building a format for this research's piece was furthered quite extensively. Yet, it was still necessary to make a choice on whether to present the piece as *one* single movement – just as a film is a compound form without clear breaks of silence – or dividing the piece into movements based on the conventions common in chamber music practice. The former would entail having the musicians play 30 minutes without a break, and it would make it difficult for selections from the piece to be performed as encores and as light concert pieces. The latter would lead to a lot of problems, since the film structure of 3 acts and 7 scenes would have to be somewhat manipulated in order to fit the traditional form of 4 movements. Based on reflections around these problems, the final decision became a combination of both: creating a 7-movement piece following the narrative structure of the film, while still giving room for the traditional division into separate movements.

Accompanying the narrative and structural analysis of the film, I performed several minor analyses over the musical material. The first being the identification of musical themes and leitmotifs.

[Appendix 5](#) is a complete index of all the most prominent themes used by James Newton Howard in

his cues. The identification of themes was necessary in order to follow the protagonists, antagonists and the sceneries set throughout the plotline, and seeing how they develop throughout the score. The themes were named based on their titles in the soundtrack, their appearance in the movie or the names given to them by James Newton Howard himself in an interview/blog post. Identifying the various themes helped determine *when* the themes were to be presented in the arrangement, and how many times the themes would have to be repeated based on their narrative hierarchy.

Learning how James Newton Howard developed a theme through the movie was important in order to place those themes correctly in the arrangement and orchestrating them accordingly. As an example, one can look at the Healing Theme:



FIGURE 5: THE HEALING THEME

The theme is heard 3 times throughout the movie. The first time we hear it is in *Act 2: Scene 4* at 1:31:00 of the movie. In this specific presentation of the theme, Newt is talking to Queenie about a girl he once loved but with whom he was sadly no longer together. The nostalgic feeling of thinking back to a heartbreak, combined with the hope of looking forward and having a friend to talk to, is the colour that this theme first is associated with. Here, the theme is gently hummed by a children's choir accompanied by soft chords in the strings, harp and celesta. The second time the theme returns is in the finale scene of Act 3 (1:52:50). It is when the Thunderbird releases a magic potion over the city of New York, *obliviating*⁷ all the no-mag witnesses and restoring everything back to normal. Here the theme is played by the full orchestra with choir and a majestic orchestration. This repetition of the theme brings back the pain of heart ache that was shown in its first presentation, but this time the emphasis is on healing and restoring hope. The third time we hear it is in the *coda* when Newt says goodbye to Tina, here subtly played by solo piano accompanied by strings (2:00:53). Here the theme invokes the pain of saying goodbye to a new friend and perhaps also falling in love after sharing an adventure together. The knowledge of this theme being presented in two distinct ways, one building

⁷ *Oblivate* is a term created by J.K. Rowling in her wizarding world, referring to the act of wiping someone's memory clean from all recollections of magic through the use of a spell or potion.

on the other, showed me the necessity to have the theme repeated at least twice in my arrangement, even though very few of the other themes would fit in twice. Therefore, the theme was placed the theme in 5th movement of the arrangement *and* in the 7th movement, giving it the chance to unfold in its full glory at the end of the arrangement.

The finale analysis that was made before starting the transcription and orchestration progress, was necessary in order to create a concert piece following a cinematic tension curve. Based on a subjective perception of tension throughout the movie, I ranked various hallmarks in the movie on a tension spectrum ranging from 1 to 10. The climax of the movie being 10 and the exciting opening of the film being 5 for catching our attention but not having introduced any conflicts or characters yet. The result can be seen in figure 6, *Tension Over Time* (below). This graph became a strong beacon of guidance when I was later in the process of selecting themes, fragments and movements to put together in the finale arrangement.



FIGURE 6: TENSION OVER TIME

Resulting from all these analytic processes a clear framework for the arrangement stood out. The piece was to have 7 movements, each presenting a different scene from – and built on the narrative structure and emotional curve – of the film. The exact selection and cutting process, choosing which musical elements from the soundtrack were to be presented when, is going to be better discussed in

the following chapter. Until then I will contend by informing the reader about which names were chosen for each movement and how. The initial names were as follows:

1. Main Titles
2. Act 1: Scene 1 – There are Witches among us/The Bank/The Niffler/Tina Takes Newt in/Macusa Headquarters
3. Act 2: Scene 1 – Credence Hands out Leaflets/The Demiguise and the Lollipop/Pie or Strudel/Escaping Queenie and Tina’s Place
4. Act 2: Scene 2 – Inside the Case
5. Act 2: Scene 3 – A Close Friend/In the Cells/The Demiguise and the Ochamy
6. Act 3: Scene 1 – Gnarlack Negotiations/Tina and Newt Trial/Let’s get the good stuff out/You’re one of us now
7. Act 3: Scene 2 – He’s listening to you Tina/Newt releases the Thunderbird/Newt says goodbye to Tina

The names were given according to which cues were chosen to be included and where they fell within the 3-act structure. Those names were unfortunately not appropriate as finale titles, as they were way too long, and the audience would not be able to place them within a frame of reference.

Therefore, they were each given a new title, designed to illustrate the story, trigger the imagination of the audience and sound appealing. This is an analysis that was made at the end of the project, but I choose to present it now in order to build a reference for the movements in the subsequent chapters. The analysis shows the emotions of each movement and the time duration:

	Name	Emotions	Time
I.	Main titles	Energy, suspense, everything is new	02:42
II.	Exposition – the fantastic world of magic	Mystic, suspense, fantastic, fun	04:13
III.	Supressed Magic and rising tension	Dark, new tension, magic	04:13
IV.	Inside Newt’s suitcase	Happy, fantastic, joyful	04:14
V.	Chasing down the Remaining Beasts	Contemplative, building up to climax	04:39
VI.	Escaping Macusa Headquarters	Action, climax, excitement	06:45
VII.	Finale – Healing and New Friendships	Resolution, sad -> happy, coda	05:45
Total:			32:30

STAGE 2: FROM TRANSCRIPTION TO ORCHESTRATION

“The string [instruments] provide us with the most expressive and appealing medium (with perhaps the exception of the human voice) that exists in the whole range of music. A good string orchestra can attain a degree of pianissimo which amounts to little more than an attenuated whisper, and is also capable of a robust and solid fortissimo which is almost ‘brassy’ in its effect.” (Jacob, 1981, 6)

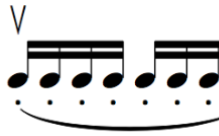
2.1 BUILDING A LEXICON

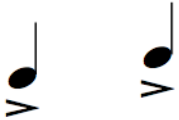
The task of transcribing a complete orchestral score, including choir and synthetic instruments, into a string quartet ensemble would inevitably need a thorough knowledge about the string instruments and the sounds they are capable of rendering. In answer to many of my initial questions such as “how do you imitate the sound of electronic samples on string instruments?” and “how can the texture created by the composer to invoke a certain emotion be replicated in a way that preserves the same emotion in my arrangement?”, I saw a need to analyse the various techniques the string instruments have to offer and see them through the eyes of an orchestrator. That is why I created my lexicon of string instrument techniques, called *Overview of Contemporary String Techniques*. The lexicon is divided into 4 sections: (1) Basic Bow Strokes, (2) Effects, (3) Miscellaneous and (4) Jazz Techniques. The latter being included since James Newton Howard uses several elements from Jazz in his score for *Fantastic Beasts and Where to Find them*.

Due to its relevance in this research, the complete lexicon will be presented below. Note that the *Basic Bow Strokes* section lists up the most common bowings used by string players and composers, while *Effects* and *Miscellaneous* include various less-common techniques, some of which have only been used in the last century. In the *Basic Bow Strokes* section, each stroke is named, illustrated, described by technique and colour and defined by its most common usage. This categorization was necessary in order to create references for various transcription and orchestration efforts aimed towards a string quartet arrangement. In the *Effect* section the analysis is a little bit different; since most of the effects are sporadically used by composers and some rarely so. Instead of common use there is the column ‘*similar to...*’, allowing parallels to be drawn between the sound of this effect and other sounds in an orchestra or synthesised instruments. The *Miscellaneous* section includes various effects that are not commonly used, some that are combinations of several effects and some that fell out of either category above (such as ornaments which is neither a bow stroke nor an effect). The

section about *jazz* presents some basic jazz notation, how it sounds and how it is played. This section became very helpful in cues like *Gnarlak Negotiations* and *Newt says goodbye to Tina*.

BASIC BOW STROKES

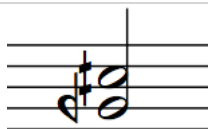
Name	Notation	Description	Colour	Common uses
Detaché		Playing straight forward with no slurs and no particular articulation	Varies, based on many factors such as vibrato, contact point, pressure and bow speed	Scales, melodies, long lines, accompanying chords, rhythm patterns, pretty much everything
Détaché porté		Adding a small swell to each bow stroke	Lighter, more expressive than normal détaché	Common in baroque music, in light melody lines, imitating woodwinds and horns
Détaché lancé		Détaché with a fast attack and slow tail	Impactful, articulates every note	For expressive melodies, impact chords and semi-percussive accompaniment
Portato (louré)		Separated notes that are slurred together on one bow	Like repeating notes on a pedalled piano, horn like, soft and warm	Expressive melodies, works well in scales as well as ostinatos, gives warm string-sound to chords
Martelé		Hammering notes from above the string with hard attack and lots of resonance.	Energetic, dramatic, hard and hammer-like	Good for upgoing scales, dramatic melody lines, like woodwind staccato
Sustained Martelé		Same as above but with longer decay.	Energetic, broad, hard attack	Good for percussive sections, rich orchestral sound
Staccato		Like portato, separated notes on one slur, but shorter and more articulated.	Light, virtuoso, well articulated	For scale runs mostly, and for arpeggio chords over several strings, very virtuoso
Flying staccato		Fast Staccato on up-bow, resulting from a tense arm and controlled release of tension.	Light, speedy, flying, feather like, like flute staccato	Scales, runs, arpeggio chords, used in melodig lines, especially in classical music

Sautillé		Very fast détaché resulting in a natural bouncing off the string.	Fast, bouncing, virtuoso, resonant and open sound.	Used in fast runs, controlled tremolo and arpeggio over several strings.
Son filé		Slow note lasting 1 min. or more requiring extremely low bow speed and steady control	Suffering, patience, out of breath, tension, lamenting.	Slow bow often used in <i>Grave</i> tempos, baroque <i>Largos</i> , long romantic melodies and such.
Legato		Slurred notes with smooth transition	Flow, like singing, wavy, soft, round, dreamy, harp, romantic, articulation etc.	Often comes together with <i>portamento</i> (a tiny pitch glide). Used in lyrical melodies as well as pretty much everything with slurs.
Spiccato		Short bow stroked from above the string created by using the natural bounce of the bow	Short, bouncy, light, happy, concentrated energy.	Used a lot in classical music, gives a light touch but can also be played in high velocity creating more dramatic effects.
Flying spiccato		Like lying staccato but lighter and using the bows bouncing effect rather than controlled tension	Light, speedy, flying, feather like, like flute staccato	Scales, runs, arpeggio chords, used in melodig lines, especially in classical music
Collé		Short, articulated note resulting from applying high pressure to the bow and releasing it quickly in one pizzicato-like impulse.	Gluey, sticky, punch, grip.	Used mostly as exercise, is a good effect to use forextremely short notes.
Détaché accentué		Accented détaché created with fast and hard attack, by applying bow pressure and speed.	Important notes, dramatic, climactic, heavy.	Often comes with variations in vibrato, used either percussively, or to accentuate melodic intentions.
Fouetté		Like accented détaché, but here with bow coming from the air and ending in the air.	Whip, floating, hitting, open sound, resonant.	Used in broad spiccato lines, scales and also as percussive effect.
Ricochet (saltando)		Fast notes using the natural bounce of the bow, slurred on a down-bow	Virtuoso, light, comic.	Great for show-off.

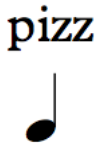
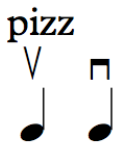
Double stops		Playing on two strings at the same time, thus creating intervals. Some intervals more idiomatic than others.	Higher velocity, rich sound, virtuoso at times.	Used mostly in middle voices to fill out the chords, also used in solo repertoire as a virtuosic effect, combined with open strings it creates good resonance.
Chords		Usually performed with a number of open strings, can be broken, arpeggiated or played in one fierce blow.	Rich in sound, guitar-like, accentuated, strong, virtuoso, open.	Baroque music, dramatic impacts, orchestral hits etc.

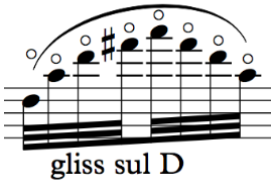
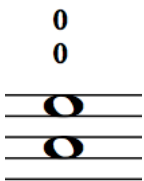
EFFECTS

Name	Notation	Description	Sound colour	Similar to...
Sul Ponticello	<i>Sul pont.</i> 	Playing close to the bridge	Mystical, cold, scratchy, hard, piercing, high pitch, rich in overtones, electric	Electric guitar (distorted), cymbal, metal scratch, high piccolo, brilliant pad
Sul tasto (flautando)	<i>Sul tasto</i> 	Playing close the finger board	Warm, soft, airy, impressionistic, ghostly,	Pan flute, Clarinet, soft pad,
Scratch		Applying great pressure on bow and slow bow speed.	Undertones, deep earthy rumble,	Squeaking door, bass clarinet, contrabassoon, wood blocks, guiro,
Natural harmonics		Playing with light finger pressure on the strings overtones	Transparent, bright, high, quick, sharp, magical, flat, sine wave	Glass harmonium, vibraphone, horn section, mellow sine wave pad, piano
Artificial harmonics		Creating 1/4 subdivision of string harmonic with placement of auxiliary finger	Same as above but higher pitches and less resonance	Squeek, high piccolo scream, electric guitar, saw
Col Legno	<i>Col legno</i> 	Hitting the string with the wooden side of the bow	Short, percussive, wood, rain drops, snap, light ticking	Tenor drum, whip, woodblocks, Xylophone, clock, guiro, finger snap

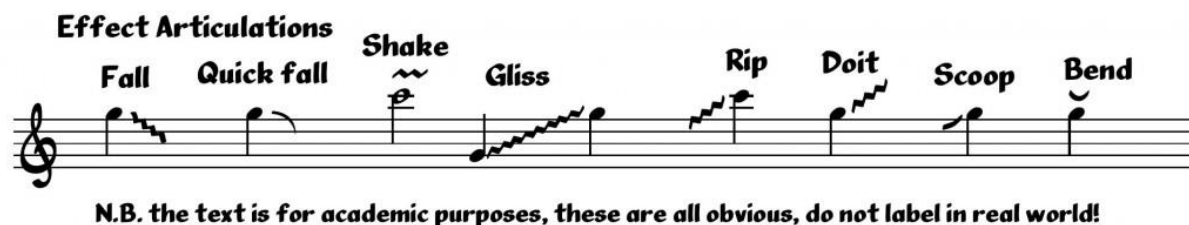
Drumming		Hitting parts of the instrument with hand or fingers	Wooden, percussive, warm, earth,	Cajon, piano, djembe, wood blocks, marimba
Glissando		Sliding finger up and down string	Energetic, harmonically bending, tension building/releasing, organic, Lamento	Whip, riser, avalanche, jazz instruments, Theremin,
Pizzicato glissando		Same as above, but pizzicato	Hitting, fiery, comic, intriguing,	Snapping string, whistle, dolphin,
Non vibrato		Playing (usually) long notes without any vibrato in L.H.	Static, cold, hard, artificial,	Horns, piano,
Micro-intervals		Hitting notes that deviate from diatonic tonality	Depending on other factors – mostly harmonically exciting	Blue notes, atmospheric harmonies, unique clusters
Snap pizzicato (Bartók pizzicato)		Bringing the string to a high tension with pizzicato so that it hits the fingerboard on rebound.	Percussive, woody, accidental, danger and fear	Whip, tenor drum, snapping of a string, Cage piano

MISCELLANEOUS

Name	Notation	Description	Sound colour	Similar to...
Pizzicato		Plucking the strings with your finger in stead of using the bow.	Short, resonant, yellow, comic, plucky.	Guitar, ukulele, mandolin, rain, synth pluck.
Pizzicato alla gitarra		Same as above, but faster and strumming the strings like a guitar.	Short, sharper than normal pizz because of finger nails.	Guitar, ukulele, mandolin etc.

Arpeggio		Playing chords over several strings with arpeggiated string crossings.	Lively, rich in tone, capriccio, jumpy, flow.	Guitar, harp, piano arpeggios, cembalo.
Glissando on harmonics	 gliss sul D	Introduced by Stravinsky. Basically gliding up and down the string with low finger pressure.	Magical, mystical, floating, alien.	Harp glissandi, synth filter sweep.
Richóchet col legno	 col legno	Ricochet with the wooden side of the bow.	Bouncy, clicky, like small insect.	Percussive, snare drum, drum stick on rim, drum roll.
Trills		Rapid, slurred repetition within an interval (usually a semitone).	Tension, high energy, movement, like water, looking for resolution.	Often used by woodwinds, flutes etc. Classical music.
Ornaments		Various additions to a melody line either before, on or right after a note.	Makes the music more alive and interesting. Great effects, lively.	For folk music, imitating native instruments, creating tension of life.
Sordino	 con sord.	Playing with a mute on the bridge of the instrument.	Muffled, nasal, soft, tender.	Mosquito, bigger string section, you hear less overtones and more friction sound.
Open strings		Playing on open strings...	Resonant, open, pure, sharp, clear.	Folk music, baroque vibes, good for drones, filling in chords and non-vib sections. Kind of like a muted trumpet.
High positions	 Sul G	Playing in high positions on lower strings in stead of using the upper strings.	Virtuoso, deep, dark, rich sound, intense.	Imitating the bassoon, clarinet, make violin sound like a viola.

FROM JAZZ



Fall: Letting the note lead into a falling scale or a falling glissando creating a chaotic hit effect.

Quick Fall: Quick glissando following an accentuated note.

Shake: Like a trill but less precise in terms of tones and articulation.

Rip: Upwards glissando leading to a climactic note.

Doit: Like fall but upwards.

Scoop: Short glissando upwards leading to an accentuated note. Very commonly used.

Bend: Slight variation of tuning to create a plucky effect.

NB: The lexicon excludes general musical techniques such as crescendo, portamento, tempo variations, as those are considered musical expressions and can be applied to most instrument families. It also goes without saying that several of these techniques can be combined in various forms, like playing pizzicato chords or legato double stops. The techniques derive from two well established technical treatises, *Principles of Violin Playing & Teaching* by Ivan Galamian (1985) and *Fiolin Talentutvikling – Teknikk og Tonekvalitet* by Terje Moe Hansen (2001), as well as secondary sources such as orchestral scores, quartet scores and personal recollections. Although limited in scope, it is believed that the listed techniques are more than sufficient for the requirement of this arrangement.

2.2 TRANSCRIPTION STRATEGIES

The transcription from audio file to notated score requires more than attentive listening skills. It requires the ability to subtract musical elements, differentiate textural components and a thorough knowledge of notation techniques. In order to prepare myself for the swift and precise transcription of the Fantastic Beasts Soundtrack, I began by transcribing the complete *Main Titles* cue from the soundtrack into an orchestral score (refer to [appendix 4](#) for the complete score), resulting in the following setup to be used throughout the research:

- Using a MIDI keyboard (iRig 5) effectively facilitates the notation as well as the identification of pitches by offering reference tones.
- Using auxiliary music staves inside the notation software (Sibelius), such as having a piano staff next to the string quartet to add notes, deleted sections and musical elements that wouldn't fit within a four-stave frame.
- Using shortcuts on the computer keyboard to quickly play and stop the recording while transcribing.
- Splitting the screen so as to have the audio file and the notation project next to each other.
- Creating a practical template within the notation software.
- Always starting the notation with the most accessible musical input. More often than not this would be the bass line, the melody line or percussive sequencing.
- Following a logical hierarchy when starting to transcribe to prevent unnecessary dwelling on certain musical fragments. The resulting hierarchy can be seen in figure 10 (below) and shows how determining the tempo and time signature first, facilitates the subsequent steps of rhythmical and musical transcription.

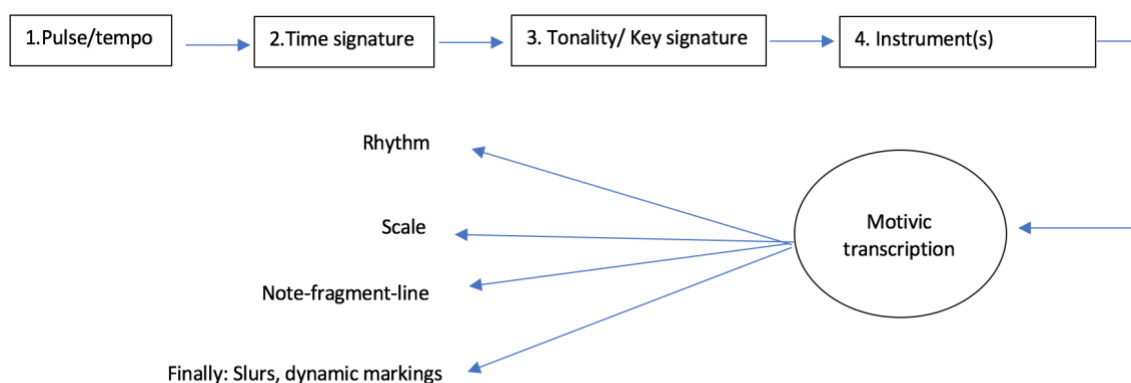


FIGURE 7: TRANSCRIPTION HIERARCHY

The above graph shows how *after* the fundamental musical elements have been determined, one can insert musical motifs by various strategies, most often assembled around rhythm, scale or the so-called *note-fragment-line* method. In this method you start by determining the motif note by note, then, putting together fragments until you eventually have a line. The final step is to add all secondary notation such as dynamic markings and slurs. Figure 11 illustrates an example of how this process takes place from beginning to end, using the opening of 4. Inside Newt's Suitcase. The transcription was made from the cue *Inside the Case* on the *Fantastic Beasts and Where to Find Them* soundtrack.

1. Pulse/tempo

2. Time Signature

3. Tonality

4. Instruments

Discernible instrumentation: Strings, horns, woodwinds, harp, cymbals

FIGURE 8: *INSIDE THE CASE STEP 1*

The illustration above shows that only by identifying the pulse first is it possible to define the time signature. The harmonic foundation in this instance was guessed out of the first chord, which in this case is a C major with added 9th. Succeeding this basic templating, the motivic transcription is called for. The first violin part sets a good example. In the first illustration (figure 12) the rhythmical components are identified and various scales are tested.

Rhythm

Scale(s)

C major scale

Chord based scale

Chord arpeggio

FIGURE 9: *INSIDE THE CASE STEP 2*

Through the use of the note-fragment-line method, which builds up a phrase note-by-note using transients or accentuated notes as premise, the full melodic line was gradually built up:

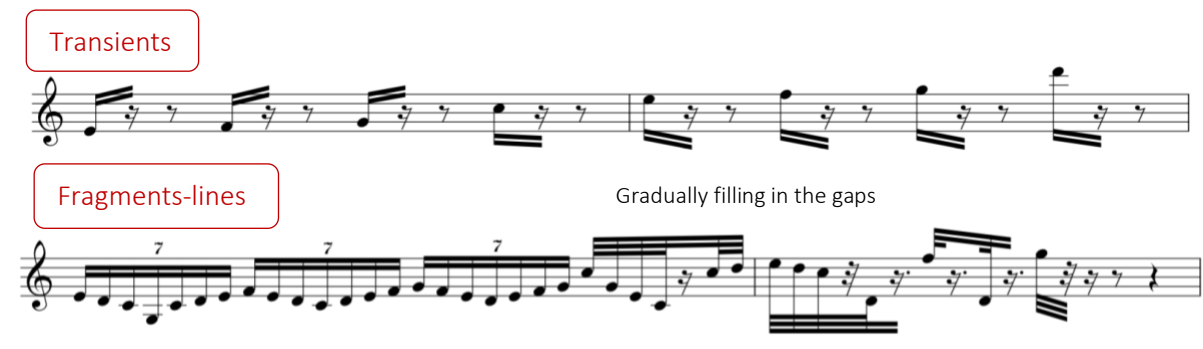


FIGURE 10: *INSIDE THE CASE STEP 3*

Ultimately the slurs, dynamic markings, various orchestration strategies etc. are appended to the finale result. Note that in figure 14 (below) the blue rings indicate the 4-note fragments that were memorized separately when transcribed, showing another use of the note-fragment-line method:

FIGURE 11: *INSIDE THE CASE STEP 4*

Two problems were encountered in the general orchestration process. Firstly, there is the question of *voicing*. Sometimes when an instrument section is playing chords, it is hard to distinguish which instrument is playing which part of the chord. It is no lie that a certain amount of guessing takes place, but most times the general rules of orchestration will give you a clue about where to place the notes. In the case of James Newton Howard, his background as a session pianist with no formal training in classical counterpoint and chorale harmonization, and film music being a genre where parallel chord progressions are common, this became the go-to strategy. The second problem regards *dynamic markings*, since these cannot be measured as precisely as for instance tempo and rhythms. The resulting solution was to use a lot of *mezzo* markings, because even if the composer might have written *p* and the conductor asked the orchestra to play more expressive, any string quartet would be

most precise in their rendition by following the dynamic marking of *mp*. To conclude, transcription routines were made early on to facilitated the notation of audio into a string quartet template, a strategy of notation based on a hierarchy of musical input was formed and the stage thus was set for solving orchestration problems.

2.3 ORCHESTRATION STRATEGIES

Based on identifying problems, testing solutions and formalizing them into graphs, the following three orchestration strategies were developed to assist the orchestration process. The first is called *Orchestration strategy 1 –General Technique*, and operates as a template for the overall orchestration from audio file to string quartet. It is designed in such a way that it can be devised on various musical sections with a consistent output quality.

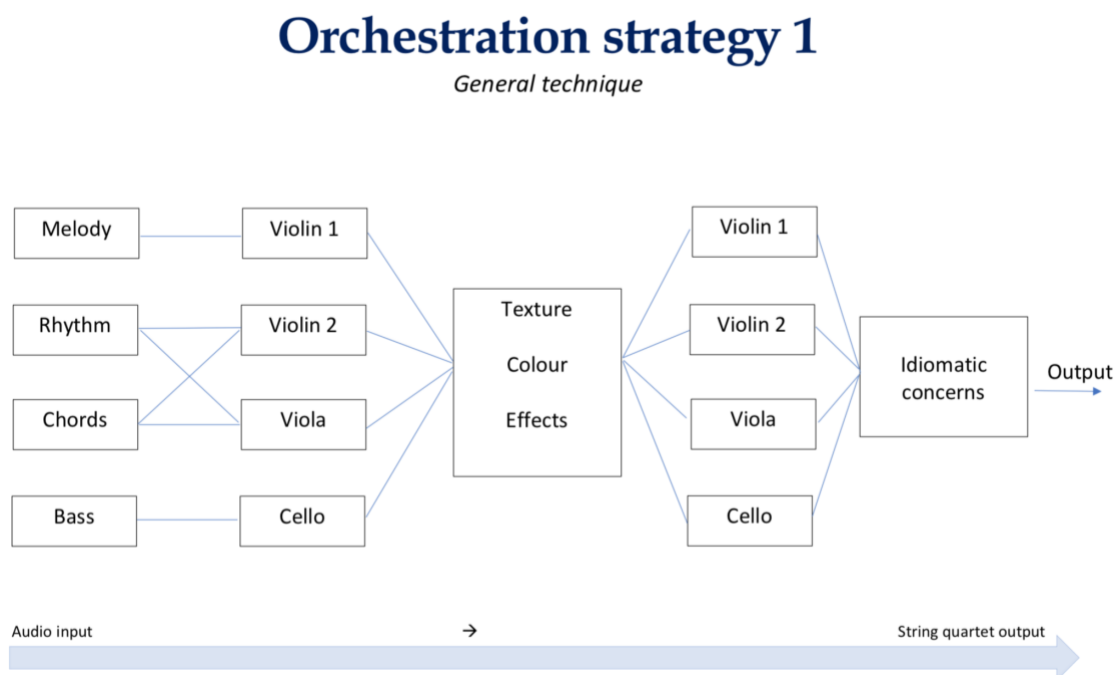


FIGURE 12: ORCHESTRATION STRATEGY 1

The first step in the strategy is to identify the four core musical elements: melody lines, rhythmical patterns, chords and bass. By default, the melody should be put in the violin, the bass in the cello and the two remaining elements spread out between viola and 2nd violin. Thereupon an analysis is made

of the music's texture, colour and effects. In the below-stated example, the observations prompt a slight change of orchestration to resemble the original sound. After re-orchestrating, the arrangement is run through a third quality check, this time investigating the idiomatic concerns of string instruments. Is it playable? Are there untapped possibilities that only a string instrument can offer? Is the voicing appropriate according to instrument properties? The finale output usually succeeds as a playable, well sounding and accurately orchestrated musical piece. The following is an example from the *Main Titles* bars 10-11:

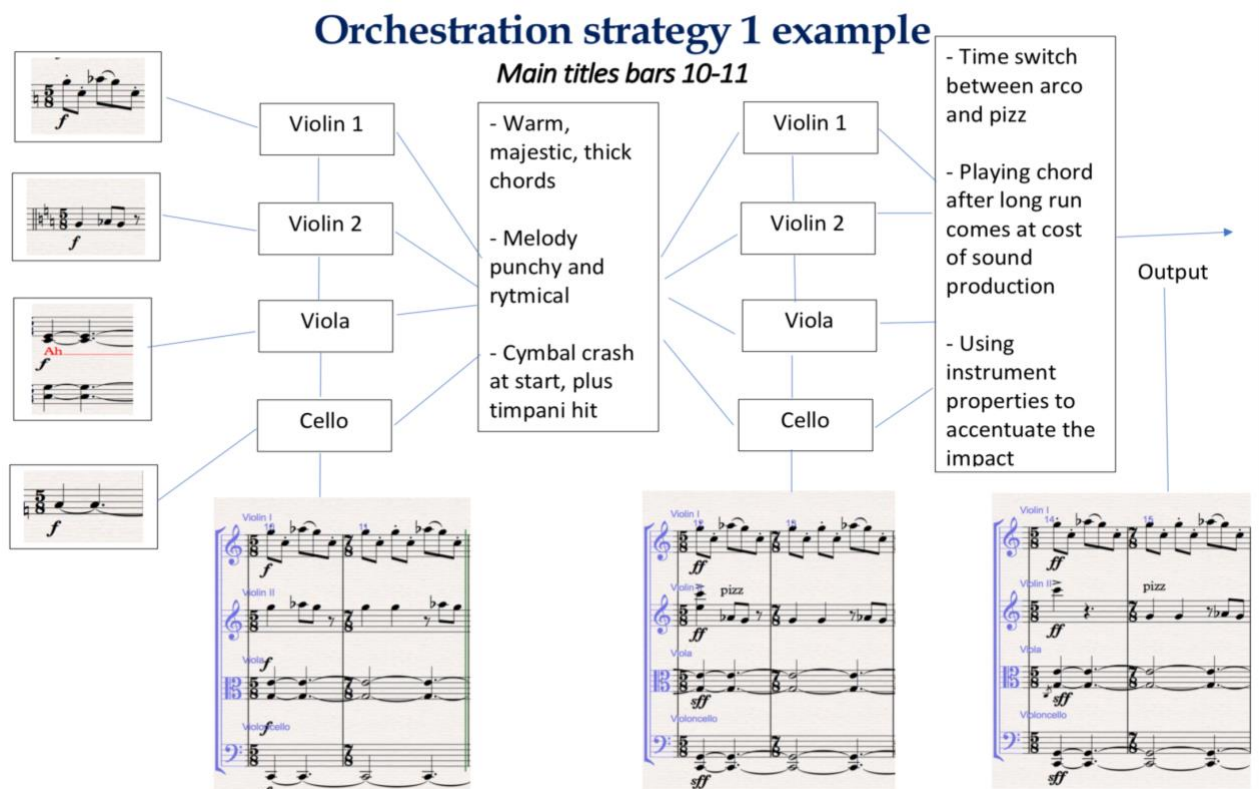


FIGURE 13: ORCHESTRATION STRATEGY 1 – EXAMPLE

As can be seen, based on the first processing of musical input (*Texture/Colour/Effects*) the *sff* dynamics were added to replicate the force and amplitude of a full brass section playing loudly. The 2nd violin imitates the cymbal by playing an accentuated chord at the beginning and then imitates the glockenspiel with punchy pizzicatos. The *idiomatic concerns* resulted in giving 2nd violin time to switch from *arco* to *pizzicato* and utilized the open strings in viola and cello to further expand the dimensions of the sound. Another example can be seen in the opening 8 bars of the *Main Titles* (figure 14), where the melody that typically is played by 1st violin was moved to the viola for the sake of preserving the

mystical sound of flute and horn playing in octaves. The distinctive method of playing tremolo, using the overtones created by varying contact point between the bow and the string, was a result of analysing the texture and trying to replicate the harp glissandi:

Misterioso ♩ = 50

The musical score is for the opening of the Main Titles, marked **Misterioso** with a tempo of ♩ = 50. It features four staves: Violin I, Violin II, Viola, and Violoncello. The Violin I and Violin II parts are in treble clef with a key signature of two flats (B-flat and E-flat) and a 6/8 time signature. They both play tremolos (trem.) starting with a *pp* (pianissimo) dynamic. The Viola part is in alto clef with a key signature of two flats and a 6/8 time signature, playing a melodic line starting with a *p* (piano) dynamic. The Violoncello part is in bass clef with a key signature of two flats and a 6/8 time signature, playing a tremolo starting with a *pp* dynamic. All string parts are marked with the instruction "organically alter between sul pont and ord." (sul ponticello and ordinarie). The score is divided into measures by vertical bar lines.

FIGURE 14: MAIN TITLES – OPENING

Next, when encountering various sections in the soundtrack using the so called “sound-mass architecture”⁸, the need for a different strategy became apparent. Based on Krzysztof Penderecki’s graphic notation techniques⁹, a second method for analysis, experimentation and notation emerged: *Orchestration Strategy 2 – for sound blocks*. This strategy was devised in sections where too many sounds are stacked on top of each other for distinction to be possible, and when those sounds transgress the fundamental rules of tonality.

⁸ “In sound-mass compositions, musical elements such as texture, density, register, dynamics, and instrumental colour replace such musical elements such as rhythm, meter, lines, chords, and harmony.” (Roig-Francoli, 2008, 281)

⁹ This specifically refers to his use of linear notation in works such as *Polymorphia* (1974) and *Threnody* (1960).

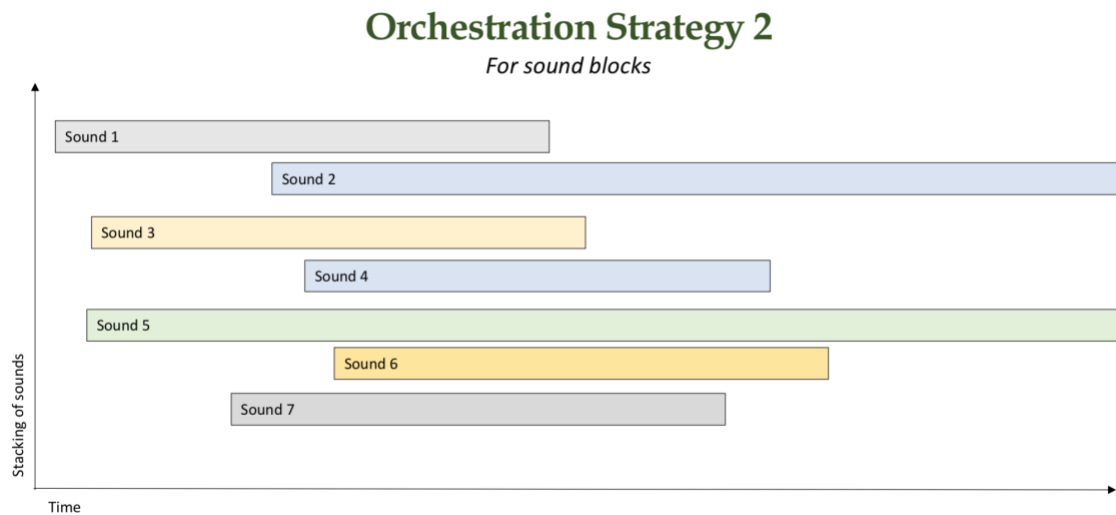


FIGURE 15: ORCHESTRATION STRATEGY 2

As can be seen in figure 15 (above), the sounds will be distinguished and illustrated as blocks unfolding over time. Further on, the following procedure is used to extract an orchestrated result (figure 16):

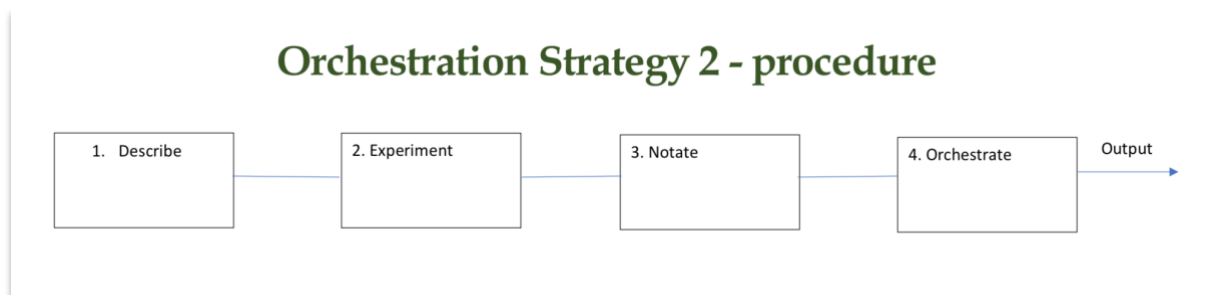


FIGURE 16: ORCHESTRATION STRATEGY 2 – PROCEDURE

The first step is (1) *describing* the sound with words, using colours, textures or similar sounds. Then those words are used in a round of (2) *experimentations* where a musician attempts to replicate the sound using the same words and the original audio as reference. Once the experiments have been performed the sounds are archived, selected and (3) *notated* as precisely as possible. Ultimately it is weaved into the (4) *arrangement* culminating in the output result. Here is an example picked from third movement of the finale piece, 3. *Suppressed magic and rising tension*, bars 7-43:

Orchestration Strategy 2 - example

Act 2 Scene 1 BARS: 7-43

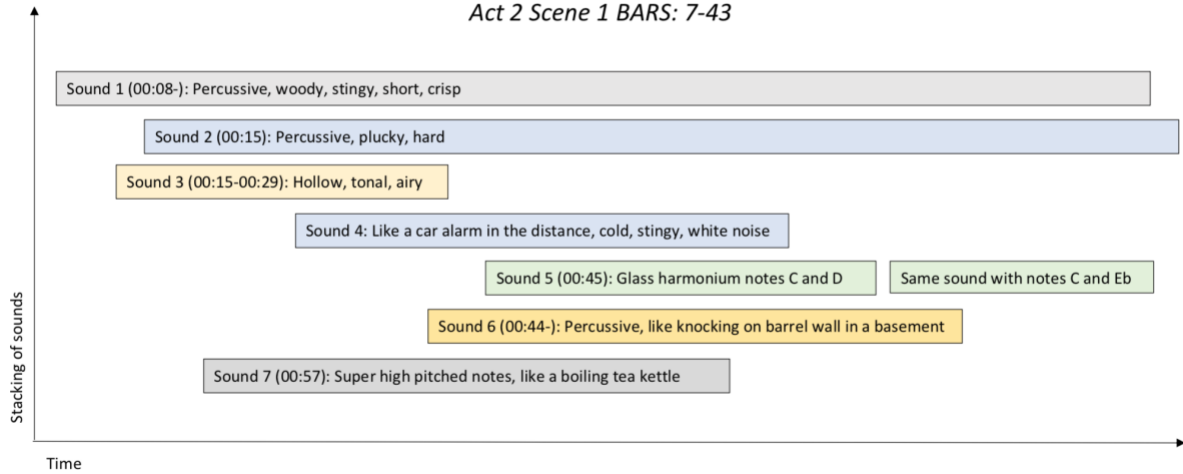


FIGURE 17: ORCHESTRATION STRATEGY 2 - EXAMPLE

The various sounds came on top of several easily orchestrated elements such as cello pizzicati and violin chords. The experiments for each sound can be found in the [appendix 2](#), and the full score is found in [appendix 1](#). After the experiments had been completed the sounds were spread out in the score notated as “sound 1” and “sound 5” etc. Here is an example from the first edition of the score, movement [3. Suppressed Magic and Rising Tension](#) in bars 28-29:

FIGURE 18: MOVEMENT 3. *SUPPRESSED MAGIC AND RISING TENSION* - BARS 28-29 A

As can be seen the 2nd violin only has the indication “sound 5” written in those bars. Using the recorded experiments, I chose the most appropriate sound and notated it thus:



FIGURE 19: MOVEMENT 3. *SUPPRESSED MAGIC AND RISING TENSION* - BARS 28-29 B

The third orchestration strategy is applicable to polyphonic sections, often containing too many voices to compress into a 4-instrument ensemble. This strategy was designed to help the arranger select the most essential musical lines or even combine several lines to preserve the initial sound as well as possible. The strategy is called *Orchestration Strategy 3 – for complex polyphonic sections*:

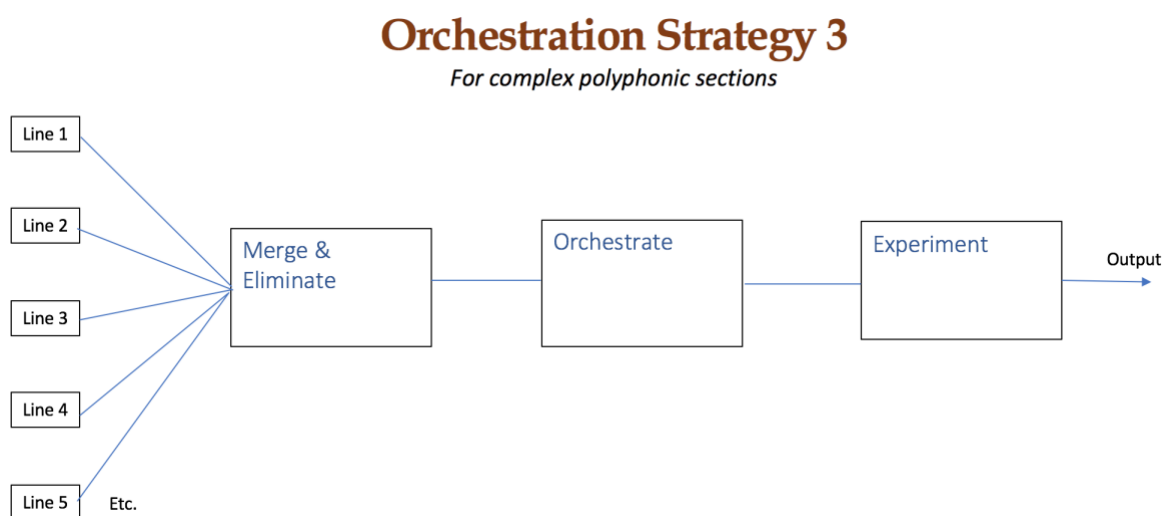


FIGURE 20: ORCHESTRATION STRATEGY 3

The first step is to identify the various musical lines. Here the auxiliary staff in a notation program comes out very helpful. In the following example from the fourth movement, *4. Inside Newt's suitcase*, bars. 59-62, these musical lines were identified:

Line 1

pizz

p

Line 2

Line 3

p

Line 4

Lines 5 & 6

FIGURE 21: MOVEMENT 4. *INSIDE NEWT'S SUITCASE* BARS 59-62 A

Through the process of merging and eliminating, two “merges” were made and 3 alternative orchestrations presented themselves. The merging process refers to combining elements from several musical lines in order to exploit bar rests, to simplify arrangement or to make it idiomatically performable. Elimination is done by either cutting off non-essential lines, lines that are doubled, lines that can be merged or lines that lose their necessity because of a solution offered by the orchestration. Merge 1 arose out of the impossibility for one single string instrument to play pizzicato that fast for such a long phrase, merge 2 attempted to glue together line 4 and line 3.

Merge 1

pizz

pizz

p

Merge 2

p

FIGURE 22: MOVEMENT 4. *INSIDE NEWT'S SUITCASE* BARS 59-62 B

Based on the “merges” three alternatives were orchestrated for testing, each presenting a different variation in the first violin eliminating and merging various elements:

The image displays three musical alternatives for Movement 4, "Inside Newt's Suitcase" bars 59-62. Each alternative is presented as a system of four staves: Violin I, Violin II, Viola, and Cello/Double Bass. The key signature is D major (two sharps) and the time signature is 4/4.

- Alternative 1:** The Violin I part features a melodic line with a trill at the beginning. The Violin II, Viola, and Cello/Double Bass parts are marked *p* and *pizz*.
- Alternative 2:** The Violin I part features a melodic line with a trill at the beginning. The Violin II, Viola, and Cello/Double Bass parts are marked *p* and *pizz*.
- Alternative 3:** The Violin I part features a melodic line with a trill at the beginning. The Violin II, Viola, and Cello/Double Bass parts are marked *p* and *pizz*.

FIGURE 23: MOVEMENT 4. *INSIDE NEWT'S SUITCASE* BARS 59-62 C

The three alternatives were tested during the experimentation session, recorded, analysed and ultimately the third was chosen for its light texture and playful violin orchestration.

2.4 SEPARATE TRACK ANALYSIS

A problem that was clear from the beginning was the question around making *cuts* and *fusing* fragments together. For example, in the second movement, which as seen in figure 3 (p. 17) includes 3 cues, had to be glued together seamlessly and trimmed in order to fit the given time frame of 4 minutes. So, how do you make the selections and the necessary cuts? To answer this question the following model became very effective. It analyses each track from the score by time duration, musical theme and emotion. The emotional analysis uses colour coding to be able to link various similar emotions together, facilitating the making of transitions by combining the right emotional material together (figure 24).

Main Titles (2:54)

Time	00:00	00:19	00:41	01:04	01:35	02:25
Theme/cue	<u>Buildup</u>	Main motif	<u>Transition</u>	Variation of main motif	Newt's theme	Thunderbird theme/New York
Emotion	Expectation	Excitement	<u>Suspense</u>	<u>Suspense, buildup</u>	Hopeful Excitement	Climax

ACT 1 – SCENE 1

There are Witches among us/The Bank/The Niffler (6:53)

Time	00:00	00:53	01:30	02:05	02:30	03:10	03:25	04:00	04:33	04:51
Theme/cue	Introduction	Witches theme	The niffler	Kowalsky Rag	Variations on niffler	<u>Transition</u>	Kowalsky Rag/variations	Mr. Bingley's theme	The niffler	Occomby hatching/Hedwigs theme
Emotion	Mystical, expectation	Mystical	Playful, excitement	Naïve, clumsy	Playful, excitement	Expectation	Playful, suspense	Disappointment	Playful, excitement	Mystical, magic

Time	05:30	05:50	06:12	06:30
Theme/cue	Kowalsky Rag	<u>Transition</u>	Unknown theme?	Coda
Emotion	Light, naïve	Suspense		Culmination of events, magical and energetic ending

3. Tina Takes Newt In/Macusa Headquarters (1:56)

Time	00:00	00:23	00:53	01:14	01:43
Theme/cue	Witches theme	<u>Transition</u>	Witches theme (Macusa)	Macus headquarters	Coda
Emotion	Magical, mystical	<u>Buildup</u>	Magical, climactic	Jazz, New York 19:20 with magical touch	Suspense

Colour codes	
	Suspenseful
	Light
	Dark
	Characteristic

FIGURE 24: SEPARATE TRACK ANALYSIS - MOVEMENT 2

Based on this analysis, musical segments could be picked out from each track and a clear pattern would indicate whether the emotional content still corresponded with the piece's place inside the plotline. In the track *There are Witches among us/The Bank /The Niffler* (above), a cut was made from 02:52 to 03:25 (**cut 1**). This was because the emotion "expectation" was too long and took away the energy from the surrounding sections. Cutting it worked out fine since the surrounding sections belonged to the same emotional codex. The next cut was made at 04:00 and jumps to 00:23 (**cut 2**) in the next movement, *Tina takes Newt in/Macusa Headquarters*. Again, the jump was made from one purple code section to another, making the transition as seamless as possible. The *Main Titles* cue was eventually cut out and turned into its own movement for three reasons: Firstly, because all of the sections are indispensable in an exposition that is to create suspense, enthusiasm and anticipation for the drama to come. Secondly, because the cue has a good flux curve from beginning to end and stands well on its own. And thirdly, because merging it with other cues would create a movement that incorporates too many themes, emotions and transitions, which in turn would take away the energy that is required in an opening movement.

As the construction of every movement went by, similar models were deployed to help making appropriate cuts and presenting the story as logically as possible according to the plotline. Yet when arriving to the finale three movements a question arose: The film has several small climaxes leading to the main climax – will this work musically? The answer was no. Having the big action scene of the *Escape from Macusa Headquarters* cue followed by a calm movement and then another intense action music movement with the *Rooftop chase* cue would feel repetitive to the audience, as both action scenes have similar musical ideas. Therefore, a choice had to be made, and by choosing the *Escape from Macusa Headquarters* cue and eliminating the other that problem was solved. In the end 21 cues were included in the arrangement, but the order was slightly changed. Figure 25 shows how the order from the cues' appearance in the movie differ from the order in my finale arrangement:

Movie order	Arrangement order
1. Main Titles	1. Main Titles
2. There are Witches Among us	2. There are Witches Among us
3. The Bank	3. The Bank
4. The Niffler	4. The Niffler
5. Kowalsky Rag	5. Kowalsky Rag
6. Tina Takes Newt In	6. Tina Takes Newt In
7. Macusa Headquarters	7. Macusa Headquarters
8. Credence Hands Out Leaflets	8. Credence Hands Out Leaflets
9. The Demiguise and the Lollipop	9. The Demiguise and the Lollipop
10. Pie or Strudel	10. Pie or Strudel
11. Escaping Queenie and Tina's place	11. Escaping Queenie and Tina's place
12. Inside the Case	12. Inside the Case
13. Gnarklack Negotiations	13. A Close friend
14. Tina and Newt's Trial	14. The Demiguise and the Ochamy
15. Let's get the good stuff out	15. Gnarklack Negotiations
16. You're one of us now	16. Tina and Newt's Trial
17. A Close friend	17. Let's get the good stuff out
18. The Demiguise and the Ochamy	18. You're one of us now
19. He's listening to you Tina	19. He's listening to you Tina
20. Newt releases the Thunderbird	20. Newt releases the Thunderbird
21. Newt says goodbye to Tina	21. Newt says goodbye to Tina

FIGURE 25: TRACK ORDER COMPARISON

The cues *A Close Friend* and *The Demiguise and the Ochamy* were moved before the climactic action cues for two reasons. Firstly, *A Close Friend* was way too similar in mood and texture to the cue *He is listening to you Tina*, so placing them together would diminish their value as emotional rests in the piece. Secondly, there was a necessity to build down the energy completely after the exciting cue *Inside the Case*, in order to build up again for the climax, a so-called “silent before the storm” manoeuvre. Pushing the musical climax (*Let's get the good stuff out/You're one of us now*) as far as possible towards the end not only corresponds with the tension curve and the plotline of the movie, but also with the attention curve of the audience. Gibbs' Attention Curve shows that our focus tends to peek at the beginning and at the end of a presentation (IQPolls, 2014), therefore it is logical to stick to the same model when setting up a concert piece:

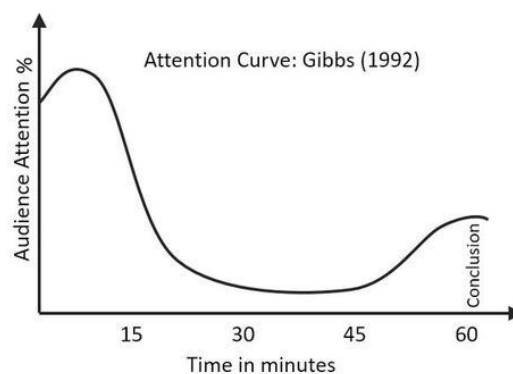


FIGURE 26: GIBBS' ATTENTION CURVE

2.5 PARTICULAR SOLUTIONS TO GENERAL PROBLEMS

The following is a presentation of various methods that were used throughout the orchestration process in order to solve various orchestration and arrangement problems. Each category is illustrated by one or more example from the score and links are provided to audio and annotated scores in the appendix. These examples should be general enough to be applied to other arrangements in the future.

Electronics

Most film music today consists of a fusion of synthetic and acoustic components. In big blockbuster scores such as James Newton Howards *Fantastic Beasts*, the budget is big enough to have a real orchestra, but even these have several synthetic additions to the recording that require some attention when transcribing. Sub bass made of wave oscillating synthesizers, atmospheric pads and massive impacts generated from sample manipulation synthesizers, are among some of the electronic sounds that can be found in this score. For example, in *2. Exposition – the fantastic world of magic* bars 28-30, there is a synthetic pad with extremely high frequencies colouring the transition from one scene to the other. It is a high pitch, glass-like, metallic sound that fades in and out with a smooth amplitude envelope. To recreate this sound one must ask the two questions: What are the properties of the sound, and what is its purpose?

* Play arpeggiated notes on 3 strings, so high on the strings you can barely distinguish the pitch

flautando

pp

p

tr

mp

mf

The Bank

Curious ♩ = 86

slow trem.

gliss.

FIGURE 27: MOVEMENT 2. EXPOSITION – THE FANTASTIC WORLD OF MAGIC BARS 28-30

Figure 27 (above) shows one way this synth can be imitated. The *properties* of glass are met by the artificial harmonic in 2nd violin, the high frequency wind chime sound is given movement by the arpeggios in 1st violin, but letting the violinist determine the frequency adds the element of randomness that would disappear if the pitches were spelled out. Flautando in 1st violin adds to the atmospheric reverb colour in the synth together with harmonic notations. The second question, regarding the *purpose* of the synth, is answered in this case with: Transition. The synth seeks to bring us from one mood to the other as quick as possible, that is why it swells in and out organically. This brings us to the sinking glissando in 1st violin, bar 30. If the arpeggio were to continue it would disturb the new motives in the lower strings as well as blurring the clear transition that happens at the bar line. In addition to this, the falling glissando creates the feeling of disappearing into the void, which is usually what a synth reverb tail will do.

Examples of sub bass drones can be found in *1. Main Titles* bars 31-32 and 54-60, orchestrated using the open C string on the cello, or in *3. Suppressed Magic and Rising Tension* bars 1-6 using the same technique but increasing textural complexity with a slow glissando. An example for the orchestration of a major sample impact is in *1. Main Titles* bar 24 where a Bartok Pizzicato creates the slamming effect of a deep bass electronic percussion hit. Further elaboration on the acoustic translation of electronic sounds will be explored in chapter 3.1 *EXPERIMENTATION ON THE VIOLA* (p.60).

Tempo designations

Another common problem is setting a tempo designation. Finding the exact BPM is easy, as it is done with the use of a metronome (preferably a tactile metronome where you can tap in the pulse and have it analysed). But most scores include a written description such as *Allegro con brio*, or *Scherzo*, giving the musicians a better indication of the mood that is required. Based on the few original scores accessible, certain conclusions were drawn setting a pattern for all the tempo indications. First, the opening bars of *1. Main Titles* are a quotation of John Williams' *Hedwigs Theme* from the Harry Potter franchise, a film of which I happened to have the music score. John Williams himself uses the indication *Misterioso* here, therefore it was put into the arrangement. In *2. Exposition, the fantastic world of Magic* there are tempo indications like *Light*, *Playful* and *Soaring!* (with exclamation mark!). These were picked up from a suite of the *Fantastic Beasts* score published by JNH's own publisher, Alfred Music. It is very likely that these tempo designations were also in the original scores. Based on these two observations it is clear that the tempo designation not only reflect the mood and the energy, but also the character of the music. By observing the character, the emotions and the colours in the audio recording it is easier to set proper tempo designations, such as *Majestic* (mvt. 4), *Thoughtful* (mvt.5), *Intensely* (mvt. 6) and *Emotional* (mvt.7).

Micropolyphony and soundscapes

Preliminary research showed that James Newton Howard drew lots of inspiration from post-modern composers such as G. Ligeti and K. Penderecki. Ligeti's micropolyphony technique is often used in cinematic scores, especially in scenes of suspense and tension. According to David Cope, "micropolyphony resembles cluster chords, but differs in its use of moving rather than static lines"; it is "a simultaneity of different lines, rhythms, and timbres" (Cope 1997, 101). James Newton Howard's orchestrator Jeff Atmajian, in the score for the movie *Signs* (2002), notates micropolyphonic lines in three ways: Cluster chords, glissando into cluster and glissando out of cluster (Figure 28).

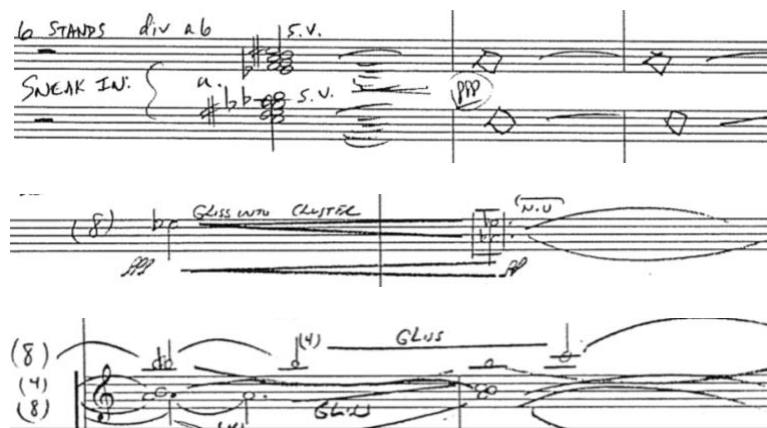


FIGURE 28: EXCERPTS FROM JAMES NEWTON HOWARD'S *SIGNS*

These kinds of clusters are difficult to achieve on a string quartet with only 4 instruments, but such a combination of glissandi and dissonant intervals lay the foundation for the string quartet notation in

1. Main Titles bars 29-35:

FIGURE 29: MOVEMENT 1. *MAIN TITLES* BARS 29-35

In movement *6. Escaping Macusa Headquarters* similar notation is used, but here also drawing inspiration from K. Penderecki's string quartets where the graphic notation and extended technique leaves a lot of freedom to the musicians themselves. Here is an example from Kzryztof Penderecki's first string quartet:

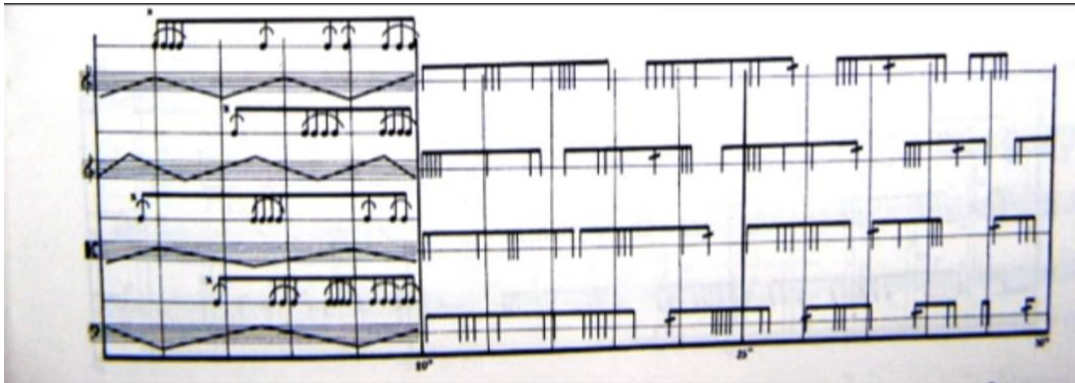


FIGURE 30: EXCERPT FROM K. PENDERECKI'S *STRING QUARTET NO. 1*

The solution used in *6. Escaping Macusa Headquarters* bars 69-74 (figure 31) includes cluster intervals, glissandi, improvised scales on given pitches and improvised arpeggios on random pitches. All this following the rules of micropolyphony, where each part is somewhat independent from the others. The same amount of improvisation is given to the 1st violin and viola in bars 110-111 (figure 32).

FIGURE 31: MOVEMENT 6. *ESCAPING MACUSA HEADQUARTERS* BARS 69-74

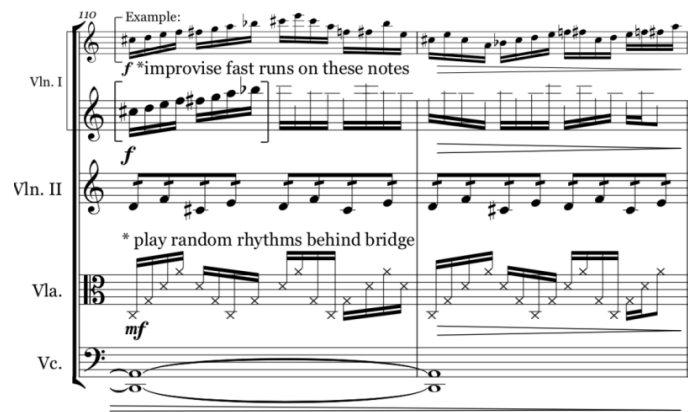


FIGURE 32: MOVEMENT 6. *ESCAPING MACUSA HEADQUARTERS* BARS 110-111

The harp and the celesta

A film music score about magicians surely must include a lot of harp and celesta, as these instruments have become a genre cliché due of their capability to make elaborate glissandi in all scales, flowing arpeggios and mystical sound colours. Translating such versatile instruments to string players is not an easy task. Solutions range from writing out scales to creating natural overtones, but sometimes even more advanced techniques are needed. In *2. Exposition – the fantastic world of magic* bars 1-13 for instance, the first edition had me write out the arpeggiated chords in harp, celesta and glockenspiel. Figure 33 shows the first transcription from version one of the arrangement:

Mysterious ♩ = 100



FIGURE 33: MOVEMENT 2. EXPOSITION – THE FANTASTIC WORLD OF MAGIC BARS 1-13 (OLD VERSION)

But after the experimentation sessions it was found that arpeggios on strings (especially with lots of accidentals) come out rather thin, harsh and clumsy. The solution was to imitate the colour created by these instruments in a way that exploited the string instruments' natural resonance and quality of sound. The example (figure 34, below) shows the use of three distinct techniques. Tremolo to create the effect of waves and flow, arpeggiated pizzicato chords to imitate the pluck of a harp while still accentuating the woodwind staccatos in the original orchestration, and trills (tremolo legato) mimicking the singing qualities of the harp.

Mysterious $\text{♩} = 100$

Violin I: *pp* *p*

Violin II: *ppp* *p* *pizz*

Viola: *ppp* *p* *Tremolo: adjust speed to swells.*

Violoncello: *ppp* *p*

FIGURE 34: MOVEMENT 2. EXPOSITION – THE FANTASTIC WORLD OF MAGIC BARS 1-13

Another example is the celesta solo in *3. Supressed Magic and Rising Tension* bars 85-92 (figure 35). Various instrumentations were tried, but the finale result combines the bell-like tone of string harmonics with the plucky flux of violin pizzicato. Adding arpeggiated chords in the pizzicato line was a choice made out of the necessity to use open string resonance as well as imitating the pianistic chord laying of a celesta player.

FIGURE 35: MOVEMENT 3. *SUPRESSED MAGIC AND RISING TENSION* BARS 85-92

Pizzicati

Pizzicato is one of the most characteristic effects of the string instruments and is regularly used by composers in all genres. But beyond its traditional use, pizzicato can come in handy when attempting to create unique soundscapes in a string quartet. The examples show how pizzicato can replicate the sound of a marimba synth (figure 36), the Finnish ethnic instrument *Kantele* (figure 37) and even jazz piano (figure 38). The technique used to imitate the Kantele is picked up from Stravinsky's *Rite of Spring*, and turned out to work out very well during the experiment sessions. All scores can be reviewed and listened to in [appendix 1](#).

FIGURE 36: MOVEMENT 2. *EXHIBITION - THE FANTASTIC WORLD OF MAGIC* BARS 50-53

FIGURE 37: MOVEMENT 4. *INSIDE NEWT'S SUITCASE* BARS 37-41

FIGURE 38: MOVEMENT 4. *FINALE – HEALING AND NEW FRIENDSHIPS* BARS 72-77

Tremolo

Another versatile effect on string instruments is the tremolo. It is frequently used by French impressionists such as Ravel and Debussy for its rich sound, floating effect and overtone filled soundscapes. Any attempt to reproduce the sound of a full string section in an orchestra should begin with tremolo. In movement *2. Exposition – the fantastic world of magic* bars 101-108 (figure 39) the viola plays tremolo even though there is no tremolo in the orchestra version. This is because the tremolo in combination with the long, sustained notes in 1st violin and cello, gives the arrangement a lot more depth than simply having sustained notes in all three instruments. In addition, it reinforces the “Soaring!” effect of that section:



FIGURE 39: MOVEMENT 2. EXPOSITION – THE FANTASTIC WORLD OF MAGIC BARS 101-103

Harmonics

The harmonics are an exceptional challenge to composers, because there are so many different ways of notating them (and some quite faulty indeed). During the experiment sessions, the majority of mistakes concerned badly notated harmonics. Through the help of Walter Piston's book *Orchestration* (1980) I created a system for notating harmonics in this piece. Piston claims there are various ways to notate harmonics, so a choice had to be made at my own discretion:

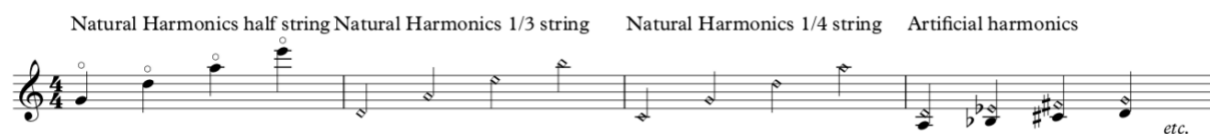


FIGURE 40: HARMONICS NOTATION

Harmonics create a unique, out-of-this-world sound that naturally came in very handy during the making of this string quartet piece. The following example is from the cue *Pie or Strudel* in movement 3. Supressed Magic and Rising Tension bars 110-114. This was one of the most difficult sections to orchestrate, because the airy celestial synth pad accompanying the orchestra was so complex. The solution of using harmonics is very satisfactory, and the soundscape created resembles surprisingly much the original:



FIGURE 41: MOVEMENT 3. *SUPPRESSED MAGIC AND RISING TENSION* BARS 110-114

Double stops, chords and string resonance

When reducing a full symphony orchestra to four string players, it is necessary to use all the tools available when needing to create a big and rich sound. The use of double stops is very good for this purpose, when used correctly. Some double stops are easier to play than other, and these will ultimately sound better. Using open strings create resonance and are better for the intonation of the ensemble. This example, from *7. Finale – Healing and New Friendships* bars 16-21, shows how double stops can be used to imitate the big, fat sound of 80 string players:

FIGURE 42: MOVEMENT 7. *FINALE – HEALING AND NEW FRIENDSHIPS* BARS 15-21

The following example (bars 60-61 in the same movement) is a crown example, illustrating the way all four string instruments can be exploited to the fullest idiomatically. The cello plays a fifth on open strings giving the bass line a lot of warmth and fullness, the viola articulates the pulse with double stops that are easy to play, and 1st violin plays a melody with sufficiently short legato bows to allow a fast speed of the bow. The part that is played by the 2nd violin is in the original score written out as

arpeggiated triads, this is fine when played by an orchestra section, but when played by a single string instrument it is less resonant and idiomatic. Spreading out the chord in a way that places each note on a different string allows the violinist to hold down the chord for the whole bar and creates a whole new level of resonance and amplitude:

Figure 43 shows a musical score for four string instruments: Vln. I, Vln. II, Vla., and Vc. The score is for bars 59-61 of Movement 7, Finale – Healing and New Friendships. Vln. I has a melodic line with a 'broad stroke' annotation. Vln. II has a fast, arpeggiated line. Vla. has a fast, arpeggiated line. Vc. has a slow, arpeggiated line. A red arrow points to the Vln. II staff in bar 61.

FIGURE 43: MOVEMENT 7. *FINALE – HEALING AND NEW FRIENDSHIPS* BARS 59-61

Experimental techniques

James Newton Howard has often been linked to Stravinsky in his use of stratification and uneven metre (Heine, 2016), it is therefore logical that several of Stravinsky's orchestration techniques got used in this arrangement. One of them was called for by the complexity of a section involving string runs, harp scales and brass counterpoints. The "harmonic glissando" used by Stravinsky in his ballet *The Firebird*, presented itself as the ideal orchestration for this part. As the cellist slides her finger across her A string with a slight touch, a blissful sound of magic and excitement sieves into our ears. This is illustrated in movement 5. Chasing down the remaining beasts bars 68-70:

Figure 44 shows a musical score for four string instruments: Vln. I, Vln. II, Vla., and Vc. The score is for bars 68-70 of Movement 5, Chasing down the remaining beasts. Vln. I has a melodic line. Vln. II has a fast, arpeggiated line. Vla. has a fast, arpeggiated line. Vc. has a fast, arpeggiated line. The score includes dynamic markings like *mf*, *cresc.*, and *f*, and a 'gliss harmonics on A-string' annotation for the Vc. staff.

FIGURE 44: MOVEMENT 5. *CHASING DOWN THE REMAINING BEASTS* BARS 68-70

Other experimental techniques include drumming on the case of the instrument (*2. Exposition – The fantastic world of Magic* bar 31), tremolo scales (*4. Inside Newt’s Suitcase* bar 47) and playing non-vibrato (*5. Chasing down the Remaining Beasts* bars 25-58).

Jazz influences

In the beginning of movement *6. Escaping Macusa Headquarters* several important Jazz techniques are devised. First it the notation of Swing rhythm at the beginning of the piece, implying that eight notes are to be played irregular. Then there is the use of bends in bars 11-12 taken from the jazz section in my technique lexicon, and ultimately there are the col legno hits towards the end in 1st violin, accentuating what a snare drum would sound like. These are among several jazz sections in the arrangement, but stand as a good example of how the challenge was solved:

Gnarlack Negotiations
Mystical (regular swing) ♩ = 70

Vln. I
 mf ord.
 gliss.
 ord.
 mf

Vln. II
 mf
 ord.
 mf

Vla.
 mf
 ord.
 mf

Vc.
 mf
 ord.
 mf

Vln. I
 11
 col legno
 f
 ord. tremolo
 p
 trem. sul pont.
 Sul C

Vln. II
 f
 trem. sul pont.
 Sul C

Vla.
 f
 Sul C

Vc.
 pp
 f
 Sul C

FIGURE 45: MOVEMENT 6. *ESCAPING MACUSA HEADQUARTERS* BARS 5-16

Legato slurs

Setting legato slurs is not a given constituent when transcribing from an audio file. Sometimes an amount of guessing is required, but most of the time the following three factors give clear indications: (1) musical phrasing, (2) technical practicality, such as breathing for winds and bow change for strings,

and (3) setting slurs as expression designations and relying on the performance to subdivide into legato bows based on their professional judgment. In certain instances slurring decisions can be made to achieve very specific purposes, such as in *2. Exposition – the Fantastic World of Magic* bars 101-108 where the 1st violins bowing pattern has been contracted in order to facilitate ease of movement and increase in velocity. The illustrations (figure 46) shows how the original bowing, which was tested during the first experiment round (see p. 61), has halved in order to increase bow speed and create a louder and more open sound fitting to the arrangement:



FIGURE 46: MOVEMENT 2. *EXPOSITION – THE FANTASTIC WORLD OF MAGIC*
BARS 101-108 (VIOLIN)

Similar observations can be made in *1. Main Titles* bars 36-46 where the gradual diminishing of slur length acts as a facilitator to the building of tension and crescendo towards the end.

Layering techniques

The technique common in the language of digital music composers as *layering*, consists of combining differing sounds and textures in order to create a new musical element. This technique is generously used by James Newton Howard himself already in the opening 10 seconds of the score where he combines the airy sound of the flute with the soothing horn to create a mystical voice for the melody line. Any attempt of creating new sounds in the string quartet should not only be limited to the potentiality of the individual instruments, but also to the possibilities of their combined sounds. In *2. Exposition – the Fantastic World of Magic* bar 60, the sound of a triangle is attempted reproduced by the combination of two distinct plucking effects. The harmonic pizzicato in the viola creates pitch and resonance, while the pizzicato behind the bridge in 2nd violin adds the hard attack, high pitch and sharp overtones associated with a triangle. Together they blend into a closer approximation of the original sound colour than any of them could have been capable of doing on their own (figure 47):



FIGURE 47: MOVEMENT 2. *EXPOSITION – THE FANTASTIC WORLD OF MAGIC* BARS 60-70

The following example is from *5. Chasing down the Remaining Beasts* bars 60-63. Here the combination of slurred eight notes with the tremolo in 1st violin blends into a much more convincing atmosphere than having all play monotonously. In the orchestral version the strings play tremolo and the woodwinds play slurred, the ratio of having 2 slurred parts to 1 tremolo part was tested against its counterpart, 1 slurred to 2 tremolo, during experiments and found to be the most convincing alternative (figure 48):

FIGURE 48: MOVEMENT 5. *CHASING DOWN THE REMAINING BEASTS* BARS 59-63

The finale example of layering technique is taken from *6. Escaping Macusa Headquarters* bars 110-112. Here the apparently random scale improvisation in high woodwinds was found best replicated by combining the high pitch improvisation in 1st violin with a layer of improvisation behind the bridge of the viola. This combination makes sure to include the inevitable *aeolian sounds* accompanying the woodwind instruments:

110 Example:
 *improvise fast runs on these notes
 f
 Vln. I
 Vln. II
 * play random rhythms behind bridge
 mf
 Vla.
 Vc.
 mf

FIGURE 49: MOVEMENT 6. *ESCAPING MACUSA HEADQUARTERS* BARS 110-112

In conclusion of this chapter, one can see that many strategies and methods were used in order to arrange a piece of contemporary film music for a string quartet, in a way that would preserve the intentions of the composer and replicates the genuine sound colours of the original score to the best extent possible. The first step of transcription led into the orchestration as they both support each other. Having distinct strategies for both steps, facilitates the work flow and enhances efficacy in terms of time and quality of work. Addressing specific problems by looking at instrument properties and isolating the nature of each problem gives room for a more precise outcome, eventually serving the purpose of expanding the possibilities available in a string quartet.

STAGE 3: EXPERIMENTATION

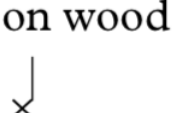
The finale stage of the research regards the various experiment settings that were used to answer questions such as: How do you replicate electronic effects on string instruments? How do you compress a massive orchestral score into a four-part ensemble? How can I insure the authenticity of sound, emotion and texture in my string quartet arrangement of a film score? To answer these questions experiments were performed in two different stages, first on my own using the viola as experiment subject, then, as soon as the first draft of the arrangement was completed it was tested with a string quartet sight reading the scores.

3.1 EXPERIMENTATION ON THE VIOLA

During the completion of *Orchestration strategy 2 – for Soundblocks*, several experiments were made on the viola. As mentioned in the previous chapter, the initial stage formulated a verbal description of the sound and its properties. Based on this verbal description and reference tracks from the original cues, several techniques were tried and recorded in order to unveil a satisfying technical approach. The following list summarizes the techniques resulting from these experiments that were included in the finale arrangement. For complete list over all the experimented techniques refer to the list of recordings (p. IX) and the recordings in the appendix folder: *Experiment sessions – solo* (appendix 2).

The list can be seen as an expansion of the technical lexicon that was developed at the onset of the project. It is divided into three categories: Plucks, drones and other FX. Plucks refer to notes that have a short attack and a dry reverb tail. Drones indicate long notes or sustained textures. FX is short for effects and describes various techniques that fall outside of the two first categories.

Plucks

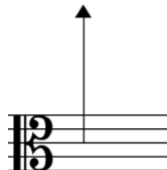
Notation	Name	Description	Colour	Use
	Dead note Spiccato on frog	Playing spiccato on the frog with a light touch in left hand. Almost like collé.	Plucky, stingy, hard, cold, brown, woody	Synth pluck. mvt.2: bars 34-35, mvt.3: bars 16-19.
	Muted pizz	Mute strings by covering it with all fingers.	Plucky, like a LP (low pass) filtered bass pluck synth.	Filtered bass. Mvt.2: bars 39-42.
	Drum on wood	Drumming on the wooden body of the instrument	Woody, percussive, mysterious.	Mvt2: bar 31.

spicc. sul pont. 	Spiccato sul ponticello	Playing spiccato close to the bridge.	Cold, metallic, harsh, short, needle.	Pluck synth, percussion. Mvt.2: bars 53-54.
pizz behind bridge 	Pizzicato behind the bridge	Plucking the string behind the bridge.	Like the ticking of a clock, dry, short, pluck.	FX. Mvt.2: bar 60.
pizz. sul pont. 	Pizzicato sul ponticello	Playing pizzicato close to the bridge.	Synth pluck with resonance filter, rich in overtones, hard.	Pluck synth. Mvt.3: bars 7-38

Drones

Notation	Name	Description	Colour	Use
trem. arpegg. 	Tremolo arpeggio	Playing tremolo, arpeggiating over 3 or more strings.	Rich in overtones, magical, string orchestra, open sound.	Orchestral effect. Mvt.7 bars 35-39.
	Bow friction sounds	Making friction sounds with the bow by dampening the string with all fingers.	Wind, mystic atmospheric pad, scratching, breathing.	Atmospheric FX. Mvt.3: bars 1-2, mvt.6: bars 1-4.
col legno 	Bow friction col legno	Same as above, but with the wooden side of the bow.	Softer than above. Like rolling a marble on a plank of wood.	Atmospheric FX. Mvt.6: bars 2-4.
	Drone behind bridge	Playing long notes behind the bridge. Requires strengthened bow control.	Cold, ice, dark, squeal, FX.	Atmospheric FX. Mvt.3: bars 21-24.

Other FX

Notation	Name	Description	Colour	Use
	Indistinguishable high pitch	Reaching high up on the fingerboard to the point that pitch is barely distinguishable.	Sharp, screaming, mysterious, piercing.	FX, cymbal, synth pads. mvt1: bar 36, mvt.2: bar 30

	Indistinguishable high pitch harmonic	Playing harmonics so high on the strings that they are barely distinguishable	Mysterious, cold, overtones, scratchy.	Synth pad. Mvt. 2 bars 28-29.
	Saltando col legno	Playing saltando stroke on the wooden side of the bow.	Bouncy, wooden, metallic, light, feather, spring effect.	Layering technique, percussive effect. Mvt.2: bar 69.
	Arpeggio behind bridge	Arpeggiating randomly on strings behind the bridge.	Like piccolo flute, high pitch and full of energy and overtones.	Layering technique. Mvt. 6 bars 110-111.

These experiments led me not only to explore new possibilities on my main instrument, the viola, but also to create a limited lexicon for the translation of electronic sounds to acoustic string instruments. Playing around on the viola was without doubt a lot of fun, but the systematic approach forced me to look for proper terminology in describing them, as well as exploring sub-categories of other pre-established techniques.

3.2 EXPERIMENTS WITH THE ARTHEMA STRING QUARTET

After the first draft of the arrangement was completed, including several alternative sections, come the time for putting it into practice and evaluating the outcome. The framework of the experiments consisted of printing out individual parts for the string quartet musicians, setting up two recording sessions with a total of 7 hours, and recording everything using a Zoom H4N hand recorder. The goal of the experiments was (1) to gain a realistic impression of how the arrangement and orchestration presumably will sound when performed, and (2) to test out various options and inconclusive instrumental designs.

The hypothesis of the experiment was formulated as follows:

- 1) The arrangement is well orchestrated for string instruments and possible to play.
- 2) The orchestration resembles as far as possible the original recordings of the soundtrack.
- 3) The story line is understood and made clear through the formal structure of the piece and its titles.

- 4) Some of the more questionable choices made in the preliminary orchestration process need to be tested out before a final decision can be made.

The protocol for the experiment sessions was made in advance, read to the musicians and strictly adhered to:

- 1) I am in no way to interfere with the interpretation process of the musicians by explaining how the music should be performed prior to the execution.
- 2) Questions from the musicians should be recorded and written down in order to be analyzed.
- 3) Everything is to be recorded, also the failed attempts, as this can be fruitful grounds for analysis.
- 4) We are to play as close to the indicated tempos as possible. A metronome is therefore a crucial attribute during the session.
- 5) The sessions will be conducted in a room with as little as possible background noise, so as not to interfere with the recordings. Max 50dB.
- 6) Ideas should be annotated in the score and on separate documents, during and after experimentation.

Based on the protocol I made beforehand no instructions were given other than what was in their scores. In this way I would see if everything had been notated in an understandable and specific enough manner. During the experiment sessions with my string quartet, the Arthema String Quartet, each movement of the piece was divided into manageable segments that were played 2-3 times before recorded. Since the members of my quartet are busy musicians with limited time, I could only afford to do these experiments through *prima vista* playing, therefore the quality of tone and intonation were not at all representable for a concert performance. Yet one of my observations, as you will see in the concluding chapter, led me to believe that this also had a positive influence on my editing work.

After conducting the experiments, the audio files were edited inside my DAW, Logic Pro X, and cut into pieces. The pieces were analysed and then the *takes* with highest quality were merged together into audio files of the complete movement ([appendix 1](#)). The edits that were made to the finale score after evaluating the experiments can be found under appendix 1 *Annotated scores*.

One particular learning that came out of the experimentation sessions is this, that due to the abnormal form and melodic treatments in this arrangement, the musicians have a different approach

to it than with standard classical repertoire. Some of the challenges regard the constant tempo changes, the fragmented polyphonic sections, the unconventional formal structure, and not having a tonal reference to the original sound of the soundtrack. Musicians nowadays usually listen to recordings as part of their study process. In this case it is even more important that they listen to a recording, since I wish the original soundtrack to be replicated as precisely as possible. Based on the observation of the experiments I concluded that rehearsal tracks needed to be made for all 7 movements, using the original soundtracks. Therefore, seven rehearsal tracks were created using the exact same musical material as in the arrangement, making it an inseparable part of the arrangement and an aural aid for musicians studying the piece in the future. The rehearsal tracks can be found in [appendix 1](#), *video files*.

It can also be observed when listening to the recordings that the very nature of the experiments produced a quite low-quality reference to the arrangement. Due to the prima vista approach of the musicians, intonation is unstable, notes are stumbled upon and rhythmical mistakes occur. Yet it was observed in the evaluation that this low quality contributed to a more critical review of the first edition. The lack of technical proficiency forced me to use my imagination to fill in the gaps, thus discovering new ideas that had previously been concealed.

The reviewed edition that was finally printed and is found in [appendix 3](#), has after these experiments and evaluations been quality checked twice. Future performances will definitely reveal more flaws, which is a natural process when a piece evolves and demands for revised editions occur. For now, the arrangement stands on its own as a complete work.

CONCLUSION

To sum up the findings, it could be argued that film music is a genre with untapped possibilities in the performance world. Film music derives its emotional content from a story and therefore inhabits unique conventions, references and traditions, different from those used by most classical composers. Although film scores are difficult to access, the development of proper transcription techniques can facilitate proper notation for arrangement purposes. James Newton Howard is a skilled composer that combines his backgrounds in pop and classical to create complex orchestral scores with electronic elements. The score for *Fantastic Beasts and Where to Find Them* contains various musical elements such as leitmotifs, sound-mass, electronic effects, drum samples, and neo-romantic harmonies – all of which present a challenge to the arranger to expand his technique beyond the traditional melody-accompaniment model.

It has also been observed that proper, systematic strategies can enhance the efficacy and quality of the orchestration. Experimentation and tryouts are a necessary part of making an arrangement, as it gives an aural feedback for the arranger and polishes the work from unnecessary pitfalls. I have learnt that through an exhaustive analysis of the narrative structure in film, new musical forms can occur, distancing this type of quartet from more common forms such as *Sonata form* and *Ternary form*. The resulting form, which may well be called a *Rhapsody*, with its 7-movement division and duration of 32 minutes, brings to life the programmatic voice of a tone poem, combined with the segmentation of an orchestral suite.

The musicians approach to film music is quite different from traditional music. There is no traditional form, few repetitions, melodies often more fragmented and sound colour has a much more important role for the transmission of emotions. The music is more actively pursued as a narrative tool, rather than a conceptual medium for a composer's creative ideas. It has been observed that musicians need to know the material not only musically, but also in relation to its animating story. Reference tracks are definitely going to follow this arrangement as it moves into the performance world. Perhaps mandatory screening of the film should also be included as an instruction to the musicians?

As a performing musician in a string quartet, the skills and techniques acquired from this kind of work will not only contribute to the making of many more arrangements that we can perform, but also assist in understanding other musical works from different genres. Enhancing my own skills in arranging contributes to expanding the multilateralism of my artistic enterprise, as well as uncovering

new possibilities for my quartet. It will also, as it seems, give me a precedence among music arrangers for being specialized in film music arrangements particularly with string quartets – something I have not yet seen anyone else deepen in at an academic level. As a viola player a lot of the repertoire available is from the 20th century until today, and understanding the tools, inspirations, references and conventions of contemporary composers, helps deepen the level of interpretation in my solo repertoire.

It is my personal opinion that film music today is being perceived as a “lesser” art form within the artistic community. Perhaps it is because of the digital composing process breaking with centuries of tradition in paper notation, or perhaps it is its association with a TV culture that spans from blatant portrayals of human stupidity to innovative pieces of storytelling. Whatever the reason, I believe that there are countless gems of sophisticated craftsmanship in the film music repertoire, drawn by highly educated composers with a wide range of compositional tools at their hands. This piece is my attempt to bring film music and the art of storytelling a little bit closer to the magnificent stage of chamber music, and perhaps through this, also bringing *chamber music* a little bit closer to the layman.

And finally, remembering the words of Nicholas Barber, “we may actually be living in a golden age of cinema” (2016), may it not be fair to assume that the film music genre is destined to grow in popularity the coming decades? May it also not be reasonable to seek out arenas for its performance that have not yet been ventured upon – in a musical landscape where programmers are longing for originality without compromising likeability?

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APPENDICES

[Appendix 1: Scores and recordings organized by movement](#)

Includes:

- a. First edition of score (annotated)
- b. Recordings from the experiments with string quartet
- c. Rehearsal tracks
- d. Final score

[Appendix 2: Experiment sessions on the viola, audio recordings](#)

[Appendix 3: Final score – compiled into one document](#)

[Appendix 4: Full orchestral transcription of the cue *Main Titles*](#)

[Appendix 5: List of musical themes in the *Fantastic Beasts* film score](#)

[Appendix 6: Digital Booklet of the *Fantastic Beasts* and *Where to find them* soundtrack](#)